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**BUSINESS MATHEMATICS AND LOGICAL
REASONING & STATISTICS**

DAILY DOSE

FOR

**CA FOUNDATION MATHS
VOLUME - 1**

CA. VINOD G. REDDY

(B.COM, FCA)

Published by :

SWAPNIL PATNI'S CLASSES

(Notes for Private Circulation Only)

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Price: ` 1000/-

Edition: November 2019 Edition (New Syllabus)

Author: CA Vinod G. Reddy

Visit us : www.swapnilpatni.com

Published by:

SWAPNIL PATNI'S CLASSES

KUMAR PRESTIGE POINT 283 , OFFICE NO. 15B ,
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Dedicated to

My Parents, Friends and Students

YOUR 'I CAN' IS MORE IMPORTANT THAN YOUR 'IQ' !!

'FORM' IS TEMPORARY, 'CLASS' IS PERMANENT !!

PREFACE

Dear Students,

It gives us immense pleasure to present before you, the daily dose on Business Mathematics and Logical Reasoning & Statistics. This book is for all the Foundation students aspiring to achieve the highest rank in CA FOUNDATION MATHS examination. The subject of Business Mathematics and Logical Reasoning & Statistics is both interesting and easy to understand.

Every care has been taken to make the presentation in this book free from blemish. Nevertheless, it is conceded that no one is infallible, unintended errors or omissions may have crept in. The users of this book are requested to bring these to the notice of the author and offer, without inhibition, their suggestions for further improvement.

Let us remind ourselves of two facts One: This book is not a substitute for the study material prescribed by ICAI, This is only an aid. Two: There is no short cut to success. It is resolute hard work that pays. Let us begin.

I am thankful to CA Ritu Dhanwani for help in notes designing.

“Everyman is free to rise as far as he is able or willing

But the degree to which he thinks determines

The degree to which he will rise”

Committed to your success,

CA Vinod G. Reddy

SWAPNIL PATNI'S CLASSES,

Pune

JUNE, 2023

WHY STUDENTS ARE AFRAID OF CA FOUNDATION MATHS EXAM?

HOW CAN YOU OVERCOME YOUR FEARS?

CA FOUNDATION MATHS is a challenging examination that tests conceptual understanding and also the ability to apply your mind to resolve problems within the given time frame.

Most books available in the market do not focus on testing conceptual understanding. They have a formulaic method whereby they feed the students similar questions that give the student's an illusion of confidence and not tackle the real problem at hand.

Questions in the DD focus on providing students with conceptual clarity and testing their ability to solve varied questions within the given timeframe. Similar questions are distributed across pages to gain momentum as you practice.

All past exam questions are covered in the DD. We are proud to claim that it is error free and our students will never be baffled with a wrong answer when they are in the midst of their exam preparation. Your time management skills with respect to calculation and navigating through varied questions from varied chapters will improve as you progress through our practice questions.

It is well known that, 'Practice makes a man perfect.' We hope this book becomes your trusted partner for CA FOUNDATION MATHS preparations!

Best of Luck!

CA Vinod Reddy

CA Ritu Dhanwani

Qs. 1 : What is the future value of ₹25,000 after 25 years, if rate of interest is 14% p.a. compound interest.

- a. ₹6,65,148 b. ₹6,61,548 c. ₹6,51,487 d. None of these.

Qs. 2 : What is the future value of ₹65,000 after 18 years, if rate of interest is 17% p.a. compound interest.

- a. ₹10,97,132 b. ₹11,28,761 c. ₹10,72,761 d. ₹12,67,871

Qs. 3 : Find Present value of ₹25,93,821 to be received after 29 years, if money is 18% effective.

- a. ₹31,248 b. ₹21,438 c. ₹21,348 d. ₹41,238

Qs. 4 : Find Present Value of ₹32,65,332 to be received after 35 years, if money is 12% effective.

- a. ₹68,144 b. ₹61,488 c. ₹61,844 d. None

Qs. 5 : A T.V can be purchased by paying ₹10,000 now and ₹20,000, ₹50,000, ₹90,000, ₹80,000 at the end of years 1,2,3,4 respectively. Find the cash down price of T.V if money is 12% effective.

- a. ₹1,83,816 b. ₹1,82,618 c. ₹1,86,218 d. ₹1,62,861

Qs. 6 : A house can be purchased by paying ₹2,00,000 now and 8 instalments of ₹1,00,000 to be paid at the end of every year. Find cash down price, if money is 15% effective.

- a. ₹6,48,733 b. ₹4,68,733 c. ₹8,46,733 d. ₹7,86,833

Qs. 7 : Mr. A invested ₹20,000 in a bank for 2 years at 12% p.a compounded half yearly. Find the amount receivable at the end of 2 years.

- a. ₹25,088 b. ₹25,249 c. ₹25,336 d. ₹22,549

Qs. 8 : $P = ₹1,00,000$, $r = 13\%$ p.a.c.q, $n=8$ years 6 months, $A=?$

- a. ₹6,29,662 b. ₹2,96,662 c. ₹2,69,992 d. ₹9,62,662

Qs. 9 : $P = ₹16,00,000$, $r = 18\%$ p.a.c.m, $n=7$ years 3 months, $A=?$

- a. ₹85,43,401 b. ₹48,53,401 c. ₹58,43,401 d. ₹58,73,401

Qs. 10 : $P = ?$, $r = 16\%$ p.a.c.q, $n=17$ years 9 months, $A = ₹50,00,00,000$

- a. ₹8,05,43,401 b. ₹3,48,53,401 c. ₹5,08,43,401 d. ₹3,08,74,712

Qs. 11 : How many conversion periods are there in a year , if the amount is compounded annually?

- a. 52 b. 4 c. 1 d. 2

Qs. 12 : Find the present value of ₹6,61,548 to be received after 25 years, if money is 14% effective

- a. ₹20,000 b. ₹16,0000 c. ₹25,000 d. ₹30,000

Qs. 13 : $P = ?$, $r = 15\%$ p.a.c.m, $n=5$ years 7 months, $A = ₹70,00,000$

- a. ₹30,45,306 b. ₹40,35,306 c. ₹30,65,403 d. ₹35,40,306

Qs. 14 : How many conversion periods are there in a year , if the amount is compounded forth-nightly?

- a. 52 b. 24 c. 15 d. 4

Qs. 15 : If there are two conversion periods in a year, the amount is compounded _____

- a. Half-yearly b. Bi-annually c. Semi-annually d. All of the above

Qs. 16 : $P = ₹20,00,000$; $n = 2$ years 5 months; $r = 12\%$ p.a.c.f, $A = ?$

- a. ₹26,70,924 b. ₹27,60,924 c. ₹29,70,624 d. None

Qs. 17 : Mr. A invested ₹ 20,000 in a bank for 2 years at 12% p.a compounded quarterly. Find the amount receivable at the end of 2 years.

- a. ₹ 25,088 b. ₹ 25,249 c. ₹ 25,336 d. ₹ 22,549

Qs. 18 : $P = ₹ 1,00,000$; $n = 15$ days; $r = 12\%$ p.a.c.d, $A = ?$

- a. ₹ 1,00,494 b. ₹ 1,00,924 c. ₹ 1,00,000 d. None

Qs. 19 : Mr. A invested ₹ 20,000 in a bank for 2 years at 12% p.a compounded yearly. Find the amount receivable at the end of 2 years.

- a. ₹ 25,088 b. ₹ 25,249 c. ₹ 25,336 d. ₹ 22,549

Qs. 20 : $P = ?$, $r = 12\%$ p.a.c.m, $n = 3$ years 6 months, $A = ₹ 75,00,000$

- a. ₹ 49,45,306 b. ₹ 49,38,142 c. ₹ 30,65,403 d. ₹ 45,40,306

Answers : DD-1

Qs.	Answer	Qs.	Answer
1	B	11	C
2	A	12	C
3	C	13	A
4	C	14	B
5	B	15	D
6	A	16	A
7	B	17	C
8	B	18	A
9	C	19	A
10	D	20	B

- Qs. 1 : What is the future value of ₹45,000 after 15 years, if rate of interest is 12% p.a. compound interest.
 a. ₹2,46,310 b. ₹4,26,548 c. ₹6,51,487 d. None of these.
- Qs. 2 : What is the future value of ₹30,000 after 18 years, if rate of interest is 17% p.a. compounded bi-annually.
 a. ₹5,65,707 b. ₹6,28,761 c. ₹5,92,761 d. ₹3,67,871
- Qs. 3 : Find Present value of ₹1,05,93,821 to be received after 10 years, if money is 15% effective.
 a. ₹29,22,070 b. ₹26,18,631 c. ₹24,77,348 d. ₹31,41,238
- Qs. 4 : Find Present Value of ₹32,65,332 to be received after 25 years, if money is 12% effective.
 a. ₹1,97,023 b. ₹1,78,092 c. ₹1,92,078 d. None
- Qs. 5 : A second-hand car can be purchased by paying ₹30,000 now and ₹40,000, ₹30,000, ₹60,000, ₹50,000 at the end of years 1,2,3,4 respectively. Find the cash down price of the car if money is 12% effective.
 a. ₹1,60,816 b. ₹1,70,618 c. ₹1,86,218 d. ₹1,64,113
- Qs. 6 : A shop can be purchased by paying ₹3,00,000 now and 7 instalments of ₹2,00,000 to be paid at the end of every year. Find cash down price, if money is 17% effective.
 a. ₹10,48,733 b. ₹12,68,733 c. ₹10,84,476 d. ₹7,86,833
- Qs. 7 : Mr. A invested ₹10,000 in a bank for 4 years at 15% p.a. compounded bi-yearly. Find the amount receivable at the end of 4 years.
 a. ₹17,835 b. ₹18,249 c. ₹15,336 d. ₹20,549
- Qs. 8 : $P = ₹10,00,000$, $r = 7\%$ p.a.c.q, $n = 3$ years 6 months, $A = ?$
 a. ₹12,29,662 b. ₹13,96,662 c. ₹12,74,917 d. ₹11,62,662
- Qs. 9 : $P = ₹16,00,000$, $r = 18\%$ p.a.c.d, $n = 29$ days, $A = ?$
 a. ₹16,23,041 b. ₹17,53,401 c. ₹16,43,401 d. None
- Qs. 10 : $P = ?$, $r = 13\%$ p.a.c.q, $n = 5$ years 9 months, $A = ₹50,00,00,000$
 a. ₹23,05,43,401 b. ₹23,96,06,512 c. ₹5,08,43,401 d. ₹3,08,74,712
- Qs. 11 : How many conversion periods are there in a year, if the amount is compounded daily?
 a. 340 b. 397 c. 365 d. 320
- Qs. 12 : Find the present value of ₹3,06,993 to be received after 23 years, if money is 11% effective
 a. ₹27,842 b. ₹37,988 c. ₹12,560 d. ₹30,000
- Qs. 13 : $P = ?$, $r = 9\%$ p.a.c.m, $n = 4$ years 2 months, $A = ₹35,00,000$
 a. ₹30,45,306 b. ₹24,08,881 c. ₹30,65,403 d. ₹28,40,306
- Qs. 14 : How many conversion periods are there in a year, if the amount is compounded monthly?
 a. 52 b. 24 c. 12 d. 4
- Qs. 15 : If there are 52 conversion periods in a year, the amount is compounded _____
 a. Weekly b. Bi-annually c. Forth-nightly d. None of the above
- Qs. 16 : $P = ₹27,000$; $n = 1$ years 3 months; $r = 12\%$ p.a.c.f, $A = ?$
 a. ₹31,358 b. ₹27,924 c. ₹29,624 d. None

Qs. 17 : Mr. A invested ₹ 23,000 in a bank for 2 years at 16% p.a compounded quarterly. Find the amount receivable at the end of 2 years.

- a. ₹ 31,477 b. ₹ 35,249 c. ₹ 28,336 d. ₹ 25,549

Qs. 18 : $P = ₹ 1,00,000$; $n = 19$ weeks; $r = 12\%$ p.a.c.w, $A = ?$

- a. ₹ 1,04,477 b. ₹ 1,09,924 c. ₹ 1,00,000 d. None

Qs. 19 : Mr. A invested ₹ 17,000 in a bank for 2 years at 12% p.a compounded weekly. Find the amount receivable at the end of 2 years.

- a. ₹ 21,605 b. ₹ 22,249 c. ₹ 20,336 d. ₹ 19,549

Qs. 20 : $A = ?$, $r = 2\%$ p.m.c.m, $n = 18$ months, $P = ₹ 68,00,000$

- a. ₹ 94,45,306 b. ₹ 90,38,142 c. ₹ 97,12,074 d. ₹ 89,40,306

Answers : DD-2

Qs.	Answer	Qs.	Answer
1	A	11	C
2	A	12	A
3	B	13	B
4	C	14	C
5	D	15	A
6	C	16	A
7	A	17	A
8	C	18	A
9	A	19	A
10	B	20	C

Qs. 1 : If Amount = `2,50,000, Principal = `80,000, n = 5 years 6 months, then r = _____% p.a.c.q
 a. 14.29% b. 15.65% c. 21.27% d. None of these.

Qs. 2 : If Amount = `30,00,000, n = 66 months, r = 25% p.a.c.q. then P =
 a. `7,97,132 b. `7,90,469 c. 9,72,761 d. 8,67,871

Qs. 3 : If A = `83,25,000, P = `50,00,000, r = 12% p.a.c.m. then n = _____ months
 a. 58.25 b. 38.37 c. 50.67 d. 51.24

Qs. 4 : If P = `85,00,000, r = 26% p.a.c.w. n = 1 year 3 months, then A = ?
 a. `1,17,68,144 b. `1,17,54,738 c. `61,54,844 d. None

Qs. 5 : Mr. A invested `2,000 in a bank for a year at 12%p.a.c.q. Find the amount receivable at the end of the year.
 a. `2,816 b. `2,618 c. `2,251 d. `2,861

Qs. 6 : Nominal rate is 13% p.a.c.q. Find effective rate of interest.
 a. 13% b. 13.65% c. 13.50% d. 14.5%

Qs. 7 : Nominal rate is 24.24% p.a.c.f. Find effective rate of interest.
 a. 25.25% b. 24.24% c. 27.28% d. 30.25%

Qs. 8 : Nominal rate is 9% p.a.c.a. Find effective rate of interest.
 a. 9% b. 9.9% c. 10% d. 12%

Qs. 9 : Nominal rate is 18.81% p.a.c.m. Find effective rate of interest.
 a. 18.81% b. 20.52% c. 21% d. 19.57%

Qs. 10 : Nominal rate is 15% p.a.c.half yearly. Find effective rate of interest.
 a. 15% b. 16.52% c. 15.56% d. 17.57%

Qs. 11 : 18%p.a.c.m is equivalent to 19.5618%p.a.c.a. This statement is
 a. True b. False c. Can't Say d. I don't know.

Qs. 12 : Effective rate of 13.65% is equivalent to _____% p.a.c.q
 a. 15% b. 13.65% c. 13% d. 12.65%

Qs. 13 : Effective rate of 26.97% is equivalent to _____% p.a.c.f
 a. 24% b. 25% c. 26.97% d. 26.38%

Qs. 14 : Effective rate of 67.77% is equivalent to _____% p.a.c.w
 a. 52% b. 24% c. 60.66% d. 67.77%

Qs. 15 : 12%p.a.c.q is equivalent to 13.550881%p.a.c.a. This statement is
 a. True b. False c. Can't Say d. I don't know.

Qs. 16 : Nominal rate is 8% p.a.c.w. Find effective rate of interest.
 a. 8% b. 8.90% c. 9% d. 8.32%

Qs. 17 : 13.17%p.a.c.m is equivalent to 14%p.a.c.a. This statement is

- a. True b. False c. Can't Say d. I don't know.

Qs. 18 : Effective rate of 21.94% is equivalent to _____% p.a.c.m

- a. 21.94% b. 20% c. 20.66% d. 22.77%

Qs. 19 : Effective rate of 16.13% is equivalent to _____% p.a.c.f

- a. 15% b. 16% c. 16.13% d. 15.13%

Qs. 20 : : Effective rate of 40.22% is equivalent to _____% p.a.c.half yearly

- a. 40.22% b. 32.22% c. 36.83% d. 35%

Answers : DD-3

Qs.	Answer	Qs.	Answer
1	C	11	A
2	B	12	C
3	D	13	A
4	B	14	A
5	C	15	B
6	B	16	D
7	C	17	A
8	A	18	B
9	B	19	A
10	C	20	C

Qs. 1 : 12% p.a.c.q = 11.88% p.a.c.m. Is the statement true

- a. True b. False c. Can't Say d. I don't know.

Qs. 2 : If Amount = ₹ 2,96,662, P = ₹ 1,00,000, n = 8 years 6 months, then r = _____ p.a.c.q

- a. 13% b. 12% c. 14% d. 15%

Qs. 3 : If A = ₹ 71,53,844, P = ₹ 50,00,000, r = 12% p.a.c.m. then n = _____ years

- a. 5 b. 4 c. 6 d. 3

Qs. 4 : If rate is 13%p.a.c.half yearly. Find the equivalent rate per annum compounded monthly

- a. 12.66% b. 13.42% c. 13% d. None

Qs. 5 : Mr. A invested ₹ 5,000 in a bank for a year at 12%p.a.c.q. Find the amount receivable at the end of the year.

- a. ₹ 5,816 b. ₹ 5,628 c. ₹ 7,251 d. ₹ 6,861

Qs. 6 : Nominal rate is 12% p.a.c.m. Find effective rate of interest.

- a. 12.68% b. 13.65% c. 13.50% d. 14.5%

Qs. 7 : Nominal rate is 22.50% p.a.c.q. Find effective rate of interest.

- a. 25.25% b. 24.47% c. 27.28% d. 30.25%

Qs. 8 : Nominal rate is 20% p.a.c.a. Find effective rate of interest.

- a. 20% b. 20.9% c. 21.50% d. 22%

Qs. 9 : Nominal rate is 52% p.a.c.w. Find effective rate of interest.

- a. 52.81% b. 55.52% c. 60.76% d. 67.77%

Qs. 10 : Nominal rate is 5% p.a.c.half yearly. Find effective rate of interest.

- a. 5% b. 5.75% c. 5.0625% d. 7.57%

Qs. 11 : 19.5618%p.a.c.m is equivalent to 18%p.a.c.a. This statement is

- a. True b. False c. Can't Say d. I don't know.

Qs. 12 : Effective rate of 10.38% is equivalent to _____ % p.a.c.q

- a. 10% b. 13.65% c. 11% d. 12.65%

Qs. 13 : Effective rate of 24.82% is equivalent to _____ % p.a.c.m

- a. 22.37% b. 23.47% c. 24.82% d. None

Qs. 14 : interest rate of 52%p.a.c.w is equivalent to _____ % p.a.c.q

- a. 55.24% b. 56.24% c. 60.66% d. 67.77%

Qs. 15 : 17.60%p.a.c.q is equivalent to 18.80%p.a.c.a. This statement is

- a. True b. False c. Can't Say d. I don't know.

Qs. 16 : Future Value = ₹ 6,61,548, Present Value = ₹ 25,000, r = 14% p.a., find n.

- a. 28 years% b. 29 years c. 25 years d. 32 years

Qs. 17 : 17.85% p.a.c.m is equivalent to 18.12% p.a.c.q. This statement is

- a. True b. False c. Can't Say d. I don't know.

Qs. 18 : _____% p.a.c.m is equivalent to 14% p.a.c.q

- a. 18.34% b. 20% c. 15.66% d. 13.84%

Qs. 19 : Effective rate of 28.13% is equivalent to _____% p.a.c.f

- a. 26.92% b. 24.92% c. 25.13% d. 22.13%

Qs. 20 : Effective rate of 7.1225% is equivalent to _____% p.a.c.half yearly

- a. 9% b. 8% c. 7% d. 6%

Answers : DD-4

Qs.	Answer	Qs.	Answer
1	A	11	B
2	A	12	A
3	D	13	A
4	A	14	A
5	B	15	A
6	A	16	C
7	B	17	A
8	A	18	D
9	D	19	B
10	C	20	C

Qs. 1 : Mr. A deposited ₹ 10,000 at the end of every year for 5 years. Find amount to be received at the end of 5 years, if money is 12% effective.

- a. ₹ 61,528 b. ₹ 63,528 c. ₹ 59,285 d. ₹ 35,222

Qs. 2 : Ms. Richa deposited ₹ 22,000 at the end of every year for 8 years. Find amount to be received at the end of 8 years, if money is 13% effective.

- a. ₹ 2,11,528 b. ₹ 2,33,528 c. ₹ 2,80,660 d. None

Qs. 3 : Annuity regular and Annuity Due are same.

- a. True b. False c. Can't Say d. I don't know

Qs. 4 : In annuity regular, the amount to be paid are different for different years

- a. True b. False c. Can't Say d. I don't know

Qs. 5 : In annuity regular, the time gap between two payments is same.

- a. True b. False c. Can't Say d. I don't know

Qs. 6 : Mr. Dominic deposited ₹ 7,000 at the end of every year for 2 years. Find amount to be received at the end of 2 years, if money is 15% effective.

- a. ₹ 16,705 b. ₹ 15,050 c. ₹ 18,800 d. ₹ 12,580

Qs. 7 : Mr. A deposited ₹ 50,000 at the beginning of each year for 4 years. Find future value of annuity, if money is 15% effective.

- a. ₹ 1,87,219 b. ₹ 2,99,290 c. ₹ 2,87,119 d. ₹ 3,05,288

Qs. 8 : Find future value of annuity due of ₹ 20,000 for 25 years @ 12% p.a.

- a. ₹ 35,68,796 b. ₹ 20,96,618 c. ₹ 26,89,679 d. ₹ 29,86,679

Qs. 9 : Mr. A decided that he is going to purchase a palace of ₹ 500 crores at the end of 50 years from now. He decided to keep some amount aside at the end of every year. Find the amount he should keep aside every year, if money is 20% effective.

- a. ₹ 10,00,000 b. ₹ 10,09,897 c. ₹ 1,09,897 d. ₹ 6,77,897

Qs. 10 : Ms. Harsha deposited ₹ 35,000 at the end of every year for 7 years. Find amount to be received at the end of 7 years, if money is 9% effective.

- a. ₹ 2,33,015 b. ₹ 3,22,015 c. ₹ 5,22,300 d. None

Qs. 11 : In annuity, when amount is paid at the beginning of every period, it is called -

- a. Annuity Regular b. Ordinary Annuity c. Annuity Due d. None

Qs. 12 : Mr. Kailash deposited ₹ 18,000 at the end of every year for 4 years. Find amount to be received at the end of 4 years, if money is 18% effective.

- a. ₹ 93,878 b. ₹ 95,288 c. ₹ 96,888 d. ₹ 94,000

Qs. 13 : Mr. A invested ₹ 20,000 at the end of every year for 4 years. Find future value of annuity at the end of 4 years, if money is 18% effective

- a. ₹ 4,01,309 b. ₹ 1,04,309 c. ₹ 5,02,508 d. ₹ 2,05,903

Qs. 14 : Mr. Balchandra will require of ₹ 20,00,000 at the end of 5 years from now. He decided to keep some amount aside at the end of every year. Find the amount he should keep aside every year, if money is 16% effective.

- a. ₹ 4,20,819 b. ₹ 4,00,000 c. ₹ 2,90,819 d. ₹ 3,02,229

Qs. 15 : Mr. D deposited ₹ 75,000 at the beginning of each year for 5 years. Find future value of annuity, if money is 8% effective.

- a. ₹ 5,87,219 b. ₹ 7,99,290 c. ₹ 4,75,195 d. ₹ 6,05,288

Qs. 16 : Mr. A received ₹ 2,87,119 at the end of 4th year. Find amount he invested at the beginning of each year, if money is 15% effective.

- a. ₹ 71,780 b. ₹ 45,000 c. ₹ 27,119 d. ₹ 50,000

Qs. 17 : Ms. Richa deposited ₹ 22,000 at the beginning of every year for 8 years. Find amount to be received at the end of 8 years, if money is 13% effective.

- a. ₹ 2,11,528 b. ₹ 3,17,146 c. ₹ 2,80,660 d. None

Qs. 18 : Ms. Piya deposited ₹ 42,000 at the beginning of every year for 5 years. Find amount to be received at the end of 5 years, if money is 7% effective.

- a. ₹ 2,58,438 b. ₹ 5,17,156 c. ₹ 3,80,560 d. None

Qs. 19 : Annuity immediate is the amount to be paid

- a. When demanded b. At the end of the year c. At the beginning of the year d. None

Qs. 20 : You require ₹ 32,00,000 at the end of 9 years from now. Find the amount you should keep aside at the end of every year, if money is 14% effective.

- a. ₹ 2,20,819 b. ₹ 3,00,000 c. ₹ 3,55,556 d. ₹ 1,98,939

Answers : DD-5

Qs.	Answer	Qs.	Answer
1	B	11	C
2	C	12	A
3	B	13	B
4	B	14	C
5	A	15	C
6	B	16	D
7	C	17	B
8	D	18	A
9	C	19	C
10	B	20	D

Qs. 14 : Mr. Khan requires ₹ 35,900 now. He can repay the amount in 8 equal annual instalments. Find the instalment amount, if rate of interest is 9.5%.

- a. ₹ 6,607.24 b. ₹ 4,200.22 c. ₹ 7,908.19 d. ₹ 3,022.29

Qs. 15 : Mr. Kartik deposited ₹ 75,000 at the end of each year for 13 years. Find the present value of amount deposited, if money is 20% effective.

- a. ₹ 5,87,219 b. ₹ 7,99,290 c. ₹ 3,39,951 d. ₹ 6,05,288

Qs. 16 Periodic Amount = 16,725; n = 9 years, r = 14.50%, Find the present value of annuity.

- a. ₹ 78,510 b. ₹ 99,200 c. ₹ 81,245 d. None

Qs. 17 : Periodic Amount = 5,00,000; n = 3 years, r = 12.50%, Find the present value of annuity.

- a. ₹ 11,78,510 b. ₹ 11,90,672 c. ₹ 12,55,766 d. None

Qs. 18 : Ms. Riya invested ₹ 5,00,000 at the end of every year for 5 years. Find Present value of amount invested, if rate of interest is 12%.

- a. ₹ 21,58,438 b. ₹ 20,17,156 c. ₹ 18,02,388 d. None

Qs. 19 : Mr. Naman took a loan of ₹ 49,25,000, to be repaid in 17 yearly equal instalments of ₹ x each. Find the value of x, if rate of interest is 13.65% p.a. compound interest.

- a. ₹ 8,58,438 b. ₹ 7,58,406 c. ₹ 9,02,388 d. None

Qs. 20 : Ms. Simran requires ₹ 52,650 now. He can repay the amount in 13 equal annual instalments. Find the instalment amount, if rate of interest is 7.90%.

- a. ₹ 3,819.29 b. ₹ 5,264.87 c. ₹ 5,556.56 d. ₹ 6,624.78

Answers : DD-6

Qs.	Answer	Qs.	Answer
1	B	11	C
2	C	12	C
3	B	13	B
4	D	14	A
5	A	15	C
6	B	16	C
7	B	17	B
8	D	18	C
9	C	19	B
10	D	20	D

Qs. 1 : A loan of ₹ 50,00,000 is to be repaid in 90 EMIs. Find EMI amount, if rate of interest is 15% p.a.c.m.

- a. ₹ 94,180.66 b. ₹ 99,190.32 c. ₹ 95,285.87 d. ₹ 92,857.30

Qs. 2 : What sum of money will produce ₹ 28,600 interest in 3 years & 3 months @ 2.5% p.a. simple interest.

- a. ₹ 3,94,000 b. ₹ 3,25,000 c. ₹ 3,52,000 d. None

Qs. 3 : A loan of ₹ 20,00,000 is to be repaid in 19 annual equal instalments. Find amount of instalment, if rate of interest is 9.75%.

- a. ₹ 3,52,999 b. ₹ 2,35,147 c. ₹ 3,25,846 d. None

Qs. 4 : In what time will ₹ 85,000 amount to ₹ 1,57,675, rate of interest being 4.5% p.a. simple interest.

- a. 99 years b. 29 years c. 19 years d. 9 years

Qs. 5 : Find the amount of ₹ 5,000 @ 12% p.a. in 4 years compounded quarterly.

- a. ₹ 8,024 b. ₹ 6,235 c. ₹ 5,000 d. None

Qs. 6 : A person sets up a sinking fund in order to have ₹ 1,00,000 after 10 years for his children's college education. How much amount should be set aside bi-annually into an account paying 5% p.a. compounded semi-annually.

- a. ₹ 3,705.67 b. ₹ 3,914.71 c. ₹ 3,852.33 d. ₹ 3,194.17

Qs. 7 : How much should be invested @ 5% p.a. so that after 4 years it amounts to ₹ 2,000. Interest is compounded annually.

- a. ₹ 1,645 b. ₹ 1,564 c. ₹ 1,639 d. ₹ 1,555

Qs. 8 : How much should be invested @ 5% p.a. so that after 4 years it amounts to ₹ 2,000. Interest is compounded quarterly.

- a. ₹ 1,645 b. ₹ 1,564 c. ₹ 1,639 d. ₹ 1,555

Qs. 9 : Find compound interest of ₹ 5,000 for 1 year @ 8% p.a.c.q.

- a. ₹ 214 b. ₹ 412 c. ₹ 142 d. ₹ 124

Qs. 10 : Compound interest on a certain sum for 2 years @ 10% p.a. is ₹ 2,100. Simple interest on the same at the same rate in 2 years will be -

- a. ₹ 2,000 b. ₹ 4,000 c. ₹ 5,000 d. ₹ 6,000

Qs. 11 : Out of certain sum $\frac{1}{3}$ rd is invested at 3%, $\frac{1}{6}$ th is invested @ 6% and the rest at 8% is invested for 2 years and simple interest from all these investments is ₹ 600, the original sum is -

- a. ₹ 3,500 b. ₹ 4,000 c. ₹ 5,000 d. ₹ 4,500

Qs. 12 : Three years back, a sum of money was remitted in bank @ 12% p.a. simple interest. The accounts are now cleared, the bank is paying the sum of ₹ 6,800. The sum originally invested was.

- a. ₹ 3,000 b. ₹ 6,000 c. ₹ 7,000 d. ₹ 5,000

Qs. 13 : An overdraft of ₹ 50,000 is to be paid back in equal annual instalments over a period of 4 years. Find the value of instalments, if interest is compounded @ 10% p.a.

- a. ₹ 14,309 b. ₹ 15,774 c. ₹ 25,508 d. ₹ 28,903

Qs. 14 : Population of a village is 10,000. If it increases at 10% p.a. what will be its population after 3 years.

- a. 13,310 b. 14,220 c. 17,908.19 d. 13,000

Qs. 15 : On a certain sum simple interest at the end of 6.25 years becomes $\frac{3}{8}$ th of the sum. The rate of interest is _____.

- a. 7% b. 9% c. 5% d. 6%

Qs. 16 The amount of certain sum of money with simple interest at certain rate of interest is ₹ 2,660 in 3 years & ₹ 3,100 in 5 years. The rate of interest is

- a. 12% b. 11% c. 13% d. 10%

Qs. 17 : A sum of money doubles itself in 10 years @ simple interest. The number of years it would require to triple itself is _____

- a. 10 years b. 15 years c. 20 years d. 25 years

Qs. 18 : At what rate of interest (compound interest) money will become 8 times in 20 years?

- a. 12.75% b. 11.22% c. 10.96% d. None

Qs. 19 : At what rate of interest (simple interest) money will become 8 times in 20 years?

- a. 35% b. 40% c. 30% d. None

Qs. 20 : In what time ₹ 1,00,000 will become ₹ 8,00,000, if the rate of interest is 10% p.a. simple interest

- a. 77 years b. 7 years c. 70 years d. 17 years

Answers : DD-7

Qs.	Answer	Qs.	Answer
1	D	11	C
2	C	12	D
3	B	13	B
4	C	14	A
5	A	15	D
6	B	16	B
7	A	17	C
8	C	18	C
9	B	19	A
10	A	20	C

Qs. 1 : Nominal rate of Interest 9.9% p.a. If Interest is compounded monthly. What will be the effective rate of Interest?

- (a) 10.36 % (b) 9.36% (c) 11.36% (d) 9.9 %

Qs. 2 : The difference between compound and simple interest at 5% per annum for 4 years on ₹ 20,000 is-

- (a) 250 (b) 277 (c) 300 (d) 310

Qs. 3. The compound interest on half-yearly rests on ₹ 10,000 the rate for the first and second years being 6% and for the third year 9% p.a. is _____.

- (a) ₹ 2,200 (b) ₹ 2,277 (c) ₹ 2,265 (d) None

Qs. 4. The present value of ₹ 10,000 due in 2 years at 5% p.a. compound interest when the interest is paid on yearly basis is _____.

- (a) ₹ 9,070 (b) ₹ 9,000 (c) ₹ 9,061 (d) None

Qs. 5. The present value of ₹ 10,000 due in 2 years at 5% p.a. compound interest when the interest is paid on half-yearly basis is _____.

- (a) ₹ 9,070 (b) ₹ 9,069 (c) ₹ 9,060 (d) None

Qs. 6. In how many years will a sum of money double at 5% p.a. compound interest?

- (a) 15.3 years (b) 14.2 years (c) 14.6 years (d) 15.2 years

Qs. 7. In how many years a sum of money trebles at 5% p.a. compound interest payable on half-yearly basis?

- (a) 18 years 7 months (b) 19 years 6 months (c) 20 years 8 months (d) 22 years 3 months

Qs. 8. A machine can be purchased for ₹ 50,000. Machine will contribute ₹ 12,000 per year for the next five years. Assume borrowing cost is 10% per annum compounded annually. Determine whether machine should be purchased or not.

- (a) Purchased (b) Not purchased (c) It doesn't make any difference (d) None

Qs. 9. Find amount to be received, if principal is ₹ 60,000 is invested @ 13% p.a. simple interest for 8 years

- a. ₹ 1,25,600 b. ₹ 1,22,400 c. ₹ 2,24,400 d. ₹ 1,45,500

Qs. 10. A loan of ₹ 50,000 is to be repaid in 7 annual equal instalments. Find amount of instalment, if rate of interest is 18.25%.

- (a) ₹ 11,311 (b) ₹ 12,411 (c) ₹ 13,211 (d) None

Qs. 11. Alibaba borrows ₹ 6 lakhs Housing Loan at 6% repayable in 20 annual instalments commencing at the end of the first year. How much annual payment is necessary.

- (a) 52,420 (b) 52,419 (c) 52,311 (d) 52,320

Qs. 12. A sinking fund is created for redeeming debentures worth ₹ 5 lakhs at the end of 25 years. How much provision needs to be made out of profits each year provided sinking fund investments can earn interest at 4% p.a.?

- (a) 12,006 (b) 12,040 (c) 12,039 (d) 12,035

Qs. 13. A machine costs ₹ 5,20,000 with an estimated life of 25 years. A sinking fund is created to replace it by a new model at 25% higher cost after 25 years with a scrap value realization of ₹ 25,000. What amount should be set aside every year if the sinking fund investments accumulate at 3.5% compound interest p.a.?

- (a) ₹ 16,000 (b) ₹ 16,564 (c) ₹ 16,046 (d) ₹ 16,005

14. Raja aged 40 wishes his wife Rani to have ₹ 40 lakhs at his death. If his expectation of life is another 30 years and he starts making equal annual investments commencing now at 3% compound interest p.a. how much should he invest annually?

- (a) ₹ 84,448 (b) ₹ 84,450 (c) ₹ 84,449 (d) ₹ 84,077

Qs. 15. Appu retires at 60 years receiving a pension of ₹ 14,400 a year paid in half-yearly instalments for rest of his life after reckoning his life expectation to be 13 years and that interest at 4% p.a. is payable half-yearly. What single sum is equivalent to his pension?

- (a) ₹ 1,45,800 (b) ₹ 1,44,871 (c) ₹ 1,44,850 (d) ₹ 1,44,781

Qs. 16. Johnson left ₹ 1,00,000 with the direction that it should be divided in such a way that his minor sons Tom, Dick and Harry aged 9, 12 and 15 years should each receive equally after attaining the age 25 years. The rate of interest being 3.5%, how much each son receive after getting 25 years old?

- (a) ₹ 50,000 (b) ₹ 51,947 (c) ₹ 52,000 (d) None

Qs. 17. The time in which a sum of money will be doubled at 6% compound interest compounded annually approximately.

- (a) 10 years (b) 12 years (c) 13 years (d) 14 years

Qs. 18. The Future Value of an annuity of ₹ 150 for 12 years at 3.5% p.a C.I is

- (a) ₹ 2,190.29 (b) ₹ 1,290.29 (c) ₹ 2,180.29 (d) none of these

Qs. 19. Find simple interest for an investment of ₹ 4,00,000 @ 5%p.a. for 4 years

- a. ₹ 90,000 b. ₹ 80,000 c. ₹ 25,000 d. ₹ 20,000

Qs. 20. Find amount of investment, if simple interest received is ₹ 8,000 @ 3%p.a. for 2 years

- b. ₹ 1,25,667 b. ₹ 1,33,333 c. ₹ 2,33,333 d. ₹ 1,45,667

Answers : DD-8

Qs.	Answer	Qs.	Answer
1	A	11	C
2	D	12	A
3	D	13	C
4	A	14	D
5	C	15	B
6	B	16	B
7	D	17	B
8	B	18	A
9	B	19	B
10	C	20	B

Qs. 1 : A sinking fund is to be created for replacement of machinery of ₹ 50,00,000 at the end of 50 years. Find amount to be kept aside every year, if money is 16% effective.

- a. ₹ 479 b. ₹ 580 c. ₹ 870 d. None

Qs. 2 : A sum of money amounts to ₹ 6,200 in 2 years & ₹ 7,400 in 3 years in simple interest. Find P and r.

- a. ₹ 3,000; 30.75% b. ₹ 3,500; 29.55% c. ₹ 3,800; 31.57% d. None

Qs. 3 : Calculate simple interest for ₹ 40,000 @5.7% for 66 months

- a. ₹ 14,640 b. ₹ 12,540 c. ₹ 15,240 d. ₹ 11,240

Qs. 4 : Find rate of interest at which a sum of money trebles itself in 8 years with compound interest.

- a. 15.27% b. 12.47% c. 17.25% d. 14.72%

Qs. 5 : A company wants to set aside a certain sum at the end of each year to create a sinking fund. If it should amount to ₹ 10,00,000 in 10 years at 12%p.a. Find the sum to be set aside every year.

- a. ₹ 65,984 b. ₹ 85,694 c. ₹ 56,984 d. None

Qs. 6 : A person purchased house paying ₹ 20,000 cash down and ₹ 4,000 at the end of every year for 25 years @ 5%p.a. compound interest. The cash down price is –

- a. 67,376 b. 76,376 c. 37,676 d. None

Qs. 7 : A sum of money doubles itself in 20 years by simple interest. How many times it will become after 120 years?

- a. 6 times b. 7 times c. 14 times d. None

Qs. 8 : A machine with useful life of 7 years costs ₹ 10,000 while another machine with a useful life of 5 years costs ₹ 8,000. The first machine saves labour expenses of ₹ 1,900 annually and second one saves ₹ 2,200 annually. Determine which machine should be purchased assuming borrowing cost is 10%p.a.c.a.

- a. Machine 1 b. Machine 2 c. Both d. None

Qs. 9 : $P = ₹ 89,000$, $A = ₹ 89,00,000$, $r = 16\%$ p.a.c.q. Find n.

- a. 36.29 years b. 62.39 years c. 29.36 years d. None

Qs. 10 : : Population of a village is 1,00,000. If it decreases at 5% p.a. what will be its population after 2 years.

- a. 93,310 b. 94,220 c. 90,250 d. 93,000

Qs. 11 : : Population of a village is 10,250 after 2 years & 11,070 after 3 years. What is the rate of increase p.a.?

- a. 9% b. 8% c. 10% d. 7%

Qs. 12 : Find the present value of annuity, if periodical amount of ₹ 5,000 invested for 12 years @4%p.a.

- a. ₹ 64,925 b. ₹ 46,295 c. ₹ 46,925 d. ₹ 49,625

Qs. 13 : Find the present value of ₹ 1 to be received after 2 years @ 10% p.a.c.a

- a. ₹ 0.89 b. ₹ 0.79 c. ₹ 0.73 d. ₹ 0.83

Qs. 14 : A sum of money doubles itself at compound interest in 5 years, in how many years it will become 32 times.

- a. 20 years b. 15 years c. 25 years d. None

Qs. 15 : Find effective rate of interest if interest = ₹ 1,800, Principal = ₹ 18,000 and no. Of years is 1 year.

- a. 20% b. 5% c. 15% d. 10%

Qs. 16 : Sinking fund is to be created for a machinery replacement for ₹ 1,00,000 at the end of 25 years. How much money should be provided out of profits each year @ 4%p.a.

- a. ₹ 2,401 b. ₹ 4,201 c. ₹ 3,401 d. ₹ 5,201

Qs. 17 : A sum of money triples itself at compound interest in 9 years. How many times it will become after 81 years.

- a. 27 times b. 6,561 time c. 81 times d. 19,683 times

Qs. 18 : If principal = ₹ 60,000, n = 2 years, simple interest = 3,500, find the rate of interest.

- a. 1.926% b. 2.916% c. 6.291% d. 9.216%

Qs. 19 : Calculate simple interest for ₹ 60,000 @3% for 25 months

- a. ₹ 4,250 b. ₹ 7,550 c. ₹ 3,750 d. ₹ 1,240

Qs. 20 : P = ₹ 1,60,000, Simple Interest = ₹ 5,000, r = 3%p.a. Find n.

- a. 1.5 years b. 1.04 years c. 2.40 years d. 4.01 years

Answers : DD-9

Qs.	Answer	Qs.	Answer
1	A	11	B
2	C	12	C
3	B	13	D
4	D	14	C
5	C	15	D
6	B	16	A
7	B	17	D
8	B	18	B
9	C	19	C
10	C	20	B

(From Qs. 1 to 5) Is the following series in A.P or G.P

Qs. 1 : 11,17,23,29,35

- a. A.P b.G.P c. Both d. None

Qs. 2 : 5,25,125,625,3125

- a. A.P b.G.P c. Both d. None

Qs. 3 : 5,55,555,5555

- a. A.P b.G.P c. Both d. None

Qs. 4 : 5,5,5,5,5,5

- a. A.P b.G.P c. Both d. None

Qs. 5 : 100,97,94,91,88,85

- a. A.P b.G.P c. Both d. None

Qs. 6 : What is the common difference in the series 1.50, 1.57, 1.64, 1.71, 1.78

- a. 0.07 b. 0.14 c. 0.7 d. None

Qs. 7 : Find r in the series $-4, 4^3, 4^5, 4^7, 4^9$

- a. 4 b. 4^2 c. 4^3 d. None

Qs. 8 : $(5x+2), (7x+9), (8x-13)$ are in A.P, Find x

- a. -29 b. 29 c. 13 d. None

Qs. 9 : $(7f-31), (11f+39), (13f+55)$ are in A.P. Find f.

- a. 27 b. -27 c. 2.7 d. None

Qs. 10 : 88,93,98,103are in A.P find t_{36}

- a. 263 b. 632 c. 362 d.108

Qs. 11 : 100,97,94,91..... are in A.P find t_{81}

- a. 140 b. 1.40 c. -140 d.-1.40

Qs. 12 : 88,93,98,103..... are in A.P find t_{200}

- a. 1038 b. 1083 c. 3081 d. 3018

Qs. 13 : 100,97,94,91..... are in A.P find t_{28}

- a. 19 b. -19 c. -91 d. 91

Qs. 14 : 100,97,94,91..... are in A.P find t_{215}

- a. -452 b. 452 c. 542 d.-542

Qs. 15 : 100,97,94,91..... are in A.P find t_{2155}

- a. -4528 b. -6362 c. -5425 d.-5420

Qs. 16 : For A.P $t_{53} = 8197$ and $t_{68} = 9217$, Find t_{200}

- a. -18193 b. 18193 c. 19183 d. -19183

Qs. 17 : For A.P $t_{53} = 8197$ and $t_{68} = 9217$, Find t_{10}

- a. -5273 b. 4661 c. -4661 d. 5273

Qs. 18 : For A.P $t_{53} = 8197$ and $t_{68} = 9217$, Find t_1

- a. -5273 b. 4661 c. -4661 d. 5273

Qs. 19 : For A.P $t_{123} = 50,813$, $T_{137} = 53,445$, value of "a" and " t_1 " are the same. This statement is -

- a. True b. False c. Partly False d. Can't Say

Qs. 20 : For A.P $t_{123} = 50,813$, $T_{137} = 53,445$, Find t_{500}

- a. 1,21,689 b. 1,29,569 c. 2,65,289 d. 1,65,289

Answers : DD-10

Qs.	Answer	Qs.	Answer
1	A	11	C
2	B	12	B
3	D	13	A
4	C	14	D
5	A	15	B
6	A	16	B
7	B	17	D
8	A	18	B
9	B	19	A
10	A	20	A

Qs. 1 : This series - 11,22,44,88,166 is in Geometric Progression .

- a. True b. False c. Partly True d. None

Qs. 2 : For G.P - 5,25,125,625,3125, find r

- a. 5 b. 20 c. 25 d. None

Qs. 3 : For A.P find n^{th} term for 11,13,15,17,19,21,.....

- a. $2n + 9$ b. $2n + 7$ c. $2n - 9$ d. $2n - 7$

Qs. 4 : 10,10,10,10,10,10, find nth term for this A.P

- a. 10 b. 0 c. 100 d. None

Qs. 5 : Find d for A.P : $p, 2p, 3p, 4p, 5p, 6p$

- a. $2p$ b. p c. $p/2$ d. None

Qs. 6 : What is the common difference in the series $2+x, 4+x, 6+x, 8+x, 10+x$

- a. $2+x$ b. x c. 2 d. None

Qs. 7 : Find the 11^{th} term for the series 1,2,3,4,5

- a. 11 b. 1 c. 10 d. None

Qs. 8 : $(2x-8), (4x-16), (5x-14)$ are in A.P, Find x

- a. 1.10 b. 10 c. -1.0 d. None

Qs. 9 : Find t_{236} for A.P. 34,37,40,43,46,49,.....

- a. 736 b. 733 c. 739 d. None

Qs. 10 : 95,100,105,110,..... are in A.P find t_{27}

- a. 225 b. 235 c. 252 d. 257

Qs. 11 : For A.P $t_{123} = 50,813, t_{137} = 53,445$. Find t_{10}

- a. 29,569 b. 59,269 c. 21,569 d. 31,659

Qs. 12 : For A.P $t_8 = 28; t_{11} = 58$. Find t_1

- a. 42 b. 10 c. -42 d. -10

Qs. 13 : For A.P $t_{100} = -3298; t_{107} = -3210$ 0625. Find t_2

- a. -4541.6875 b. -4259.125 c. -4529.125 d. -3900.1350

Qs. 14 : For A.P find $t_{215} = 545; t_{200} = 507.50$. Find the common difference.

- a. -2.5 b. 2.5 c. -7.50 d. 7.550

Qs. 15 : $t_1 = 27; t_{39} = 37$. Find common difference.

- a. 12 b. 1.2222 c. 0.2777 d. 1.2777

Qs. 16 : For A.P, common difference is 5, $t_{261} = 2600$. Find t_{125}

- a. 1920 b. 1290 c. 1300 d. None

Qs. 17 : For A.P $t_1 = 8197$ and $t_2 = 9217$, Find t_5

- a. 12,277 b. 17,722 c. 12,777 d. 13,297

Qs. 18 : Find n^{th} term for A.P, if $t_2 = 35$; $t_5 = 62$

- a. $9n + 17$ b. $17n - 9$ c. $9n - 17$ d. $17n + 9$

Qs. 19 : Find 5th term for A.P if $a = 26$; $d = -1.5$

- a. 21.50 b. 20 c. 32 d. 30.50

Qs. 20 : Find the difference between 1st and 20th term of A.P 1,3,5,7,9.....

- a. 38 b. 37 c. 39 d. 40

Answers : DD-11

Qs.	Answer	Qs.	Answer
1	B	11	A
2	A	12	C
3	A	13	C
4	A	14	B
5	B	15	C
6	C	16	A
7	A	17	A
8	B	18	A
9	C	19	B
10	A	20	A

Qs. 1 : For A.P, if $t_{3958} = 2956$, $t_{3979} = 4699$, Find t_1

- a. -2,35,475 b. 2,35,475 c. -3,25,475 d. None

Qs. 2 : For A.P, if $t_{3958} = 2956$, $t_{3979} = 4699$, Find common difference

- a. -83 b. 83 c. 98 d. None

Qs. 3 : Sum of first 20 natural numbers is -

- a. 55 b. 210 c. 120 d. 420

Qs. 4 : Sum of first 13 natural numbers is -

- a. 130 b. 91 c. 182 d. None

Qs. 5 : Sum of squares of first 8 natural numbers is -

- a. 204 b. 408 c. 402 d. None

Qs. 6 : What is the common difference in the series $5+x, 6+x, 7+x, 8+x, 9+x$

- a. $1+x$ b. x c. 1 d. None

Qs. 7 : Sum of cubes of first 11 natural numbers is-

- a. 4653 b. 4356 c. 4563 d. None

Qs. 8 : Sum of first 20 odd natural numbers is -

- a. 400 b. 1521 c. 4000 d. None

Qs. 9 : Sum of $1+3+5+7+ \dots +39 =$

- a. 400 b. 1521 c. 4000 d. None

Qs. 10 : $101+105+109+113+117+ \dots +1,82,841$

- a. 4,17,89,44,106 b. 4,88,89,44,106 c. 4,99,89,44,106 d. None

Qs. 11 : $88+92+96+100+ \dots +4848$

- a. 29,39,388 b. 59,39,388 c. 21,39,388 d. None

Qs. 12 : $55+63+71+79+ \dots$. Find S_{561}

- a. 12,47,945 b. 14,75,945 c. 12,87,495 d. None

Qs. 13 : For A.P $t_{80} = 5361$, $t_{90} = 5486$, Find S_{200}

- a. 23,11,450 b. 14,25,690 c. 15,45,295 d. 11,23,450

Qs. 14 : For AP, $t_{10}=80$; $S_{12} = 560$; Find a.

- a. -5.17 b. -5.71 c. -7.51 d. -7.15

Qs. 15 : $1+3+5+7+9$ is

- a. 81 b. 9 c. 5 d. 25

Qs. 16. $1+3+5+7+ \dots + 21$ is

- a. 121 b. 441 c. 370 d. 444

Qs. 17. Sum of first 30 even numbers is

- a. 930 b. 900 c. 225 d. 240

Qs. 18. $2+4+6+8+\dots+30$ is

- a. 930 b. 900 c. 255 d. 240

Qs. 19. $59+63+67+71+75+\dots+107$ is

- a. 1081 b. 1079 c. 1907 d. 1801

Qs. 20. If t_n for A.P. is $8n+3$. Find S_n

- a. $7n^2+7n$ b. $7n^2+4n$ c. $4n^2+7n$ d. $2n^2+7n$

Answers : DD-12

Qs.	Answer	Qs.	Answer
1	C	11	A
2	B	12	C
3	B	13	D
4	B	14	B
5	A	15	D
6	C	16	A
7	B	17	A
8	A	18	D
9	A	19	B
10	A	20	C

Qs. 1 : $11^3+12^3+13^3+ \dots +55^3$

- a. 22,35,475 b. 23,68,575 c. 33,25,475 d. None

Qs. 2 : $545+546+547+ \dots +988$

- a. 4,30,426 b. 3,83,446 c. 3,40,326 d. None

Qs. 3 : $t_5 = 89$; $t_8 = 69$ for A.P. find S_{88}

- a. 15,341 b. -15,341 c. 12,351 d.-12,351

Qs. 4 : In A.P. ,if $t_n = 6n-11$, find S_n

- a. $3n^2-8n$ b. $8n^2-3n$ c. $8n^2-8n$ d. None

Qs. 5 : Sum of cubes of first 8 natural numbers is -

- a. 1204 b. 1408 c. 1296 d. None

Qs. 6 : If S_n for A.P is $15n^2-9n$, Find t_n

- a. $24n-30$ b. $30n-24$ c. $6n-30$ d. None

Qs. 7 : If S_n for A.P is $15n^2-9n$, Find t_1

- a. 6 b. 9 c. 15 d. None

Qs. 8 : If S_n for A.P is $5n^2-16n$, Find t_n

- a. $5n-16$ b. $21n-10$ c. $16n-5$ d. None

Qs. 9 : If S_n for A.P is $5n^2-16n$, Find t_{20}

- a. 169 b. 179 c. 159 d. None

Qs. 10 : If S_n for A.P is $5n^2-16n$, Find t_{28}

- a. 169 b. 229 c. 259 d. None

Qs. 11 : If t_n for A.P. is $6n-6$. Find S_n

- a. $3n^2-8n$ b. $3n^2-3n$ c. $8n^2-3n$ d. None

Qs. 12 : For A.P. if $t_1= 11$, common difference is 2, Find t_n

- a. $11n+2$ b. $2n+11$ c. $2n+9$ d. None

Qs. 13 : $101^3+102^3+103^3+ \dots +123^3$

- a. 3,23,11,450 b. 3,26,53,376 c. 3,15,45,295 d. 5,11,23,450

Qs. 14 If S_n for A.P is n^2-10n ; find t_n .

- a. $2n+11$ b. $11n+2$ c. $11n-2$ d. $2n-11$

Qs. 15 : If S_n for A.P is n^2-10n ; find t_{35} .

- a. 95 b. 59 c. 56 d. 35

Qs. 16. If 9th term of A.P is 40 and 40th term is 9. Find 49th term

- a. Infinity b. 0 c. 49 d. -49

Qs. 17. For A.P. $t_{85} = 15$, $t_{15} = 85$. Find t_{100}

- a. 0 b. Infinity c. 100 d. -100

Qs. 18. For A.P. if $t_5 = 9$; $t_9 = 5$, find t_{41}

- a. -41 b. 0 c. Infinity d. -27

Qs. 19. For A.P., if $t_{66}=12$ and $t_{12} = 66$, find t_{88}

- a. -10 b. -88 c. 0 d. Infinity

Qs. 20. For A.P. if $t_5 = 9$; $t_9 = 5$, find t_{14}

- a. 14 b. 41 c. Infinity d. 0

Answers : DD-13

Qs.	Answer	Qs.	Answer
1	B	11	B
2	C	12	C
3	B	13	B
4	A	14	D
5	C	15	B
6	B	16	B
7	A	17	A
8	D	18	D
9	B	19	A
10	C	20	D

- Qs. 1 : If 10th term of AP is 20 and 20th term is 10 then 30th term is
 a. Zero b. 30 c. 45 d. None
- Qs. 2 : For A.P. If $13 \times t_{13} = 30 \times t_{30}$ then $t_{43} = ?$
 a. 43 b. 48 c. -1 d. None
- Qs. 3 : If $S_{30} = S_{40}$ for A.P. then $S_{70} = ?$
 a. Zero b. 110 c. -110 d. None
- Qs. 4 : If p times of pth term is q times of qth term for A.P. then (p+q)th for A.P. is
 a. Zero b. -q c. (p+q) d. None
- Qs. 5 : For A.P. fifth term is 50 and 50th term is 5 then 60th term is -
 a. -5 b. Zero c. 55 d. 65
- Qs. 6 : Insert 2 A.means between 2 and 8
 a. 4,6 b. 2.50,5.00 c. 4,16 d. None
- Qs. 7 : If a,b,c,d,e,f,g,h are in A.P. then
 a. $b-a = c-a$ b. $b-a = h-g$ c. $ab=cd$ d. None
- Qs. 8 : If a,b,c,d,e,f,g,h are in A.P. then a,c,e,g are in
 a. A.P. b. G.P. c. H.P. d. None
- Qs. 9 : If a,b,c,d,e,f,g,h are in A.P. then $c-a = e-c$
 a. True b. False c. Can't Say d. Out of syllabus
- Qs. 10 : if Log a, Log b, Log c are in AP then a,b,c are in
 a. A.P. b. G.P. c. H.P. d. None
- Qs. 11 : $10 + 9.666666666 + 9.333333333 + 9.00 \dots\dots\dots = 155$ then n =?
 a. 30 b. 31 c. Option a or b d. Can't Say
- Qs. 12 : 5 A.means between 20 and 200 are
 a. 50,80,110,145,170 b. 40,60,80,100,120 c. 50,80,110,140,170 d. None
- Qs. 13 : What is AM of 50 and 110
 a. 75 b. 160 c. 40 d. 80
- Qs. 14 In Progression 5,15,45,135 what is t_{10}
 a. 98555 b. 98,514 c. 98,415 d. None of these
- Qs. 15 : In Progression 5,15,45,135 what is S_{12}
 a. 13,26,800 b. 13,25,900 c. 98,415 d. 13,28,600
- Qs. 16. nth element of sequence 1,3,5,7.... is
 a. n b. n-1 c. 2n-1 d. None of these
- Qs. 17. nth element of sequence 11,17,23,29.... is
 a. 0 b. 2n+90 c. 6n+50 d. 6n+5

Qs. 18. $1 + 3 + 5 + 7 + 9 + \dots + 511 = ?$

- a. 2,61,121 b. 1,31,072 c. 65,536 d. None

Qs. 19. Insert 5 Geometric means between 10 and 7290

- a. 30,90,270,810,2430 b. 20,40,80,160,320
c. 30,300,900,2700,8100 d. None

Qs. 20. 1000,800,640,512 Find S_{11}

- a. 4511 b. 4577.10 c. 4570.50 d. 0

Answers : DD-14

Qs.	Answer	Qs.	Answer
1	A	11	C
2	D	12	C
3	A	13	D
4	A	14	C
5	A	15	D
6	A	16	C
7	B	17	D
8	A	18	C
9	A	19	A
10	B	20	C

Qs. 1 : Find 7th term of A.P. 8,5,2,-1

- a. -10 b. 10 c. -13 d. None

Qs. 2 : If a,b,c,d,e,f,g,h,i,j are in GP and common ratio is 10 then for GP a,c,e,g,i common ratio will be

- a. 2r b. 100 c. 20 d. None

Qs. 3 : : If a,b,c,d,e,f,g,h,i,j are in AP and common difference is 25 then for AP a,c,e,g,i common difference will be

- a. 625 b. 25 c. 200 d. 50

Qs. 4 : If a,b,c,d,e,f,g,h,i,j are in AP then (e-c) = ?

- a. (b-a) b. (d-c) c. (j-h) d. None

Qs. 5 : If a, b, c, d are in GP then a^2, b^2, c^2, d^2 are also in GP-

- a. True b. False c. May be true d. Can't Say

Qs. 6 : If x, y, z, p, q are In GP then z is GM of x and q

- a. True b. False c. May be true d. Can't Say

Qs. 7 : Sum of First 'n' natural numbers is

- a. $n(n+1)/2$ b. $n(n+1)(2n+1)/6$ c. n^2 d. None

Qs. 8 : Sum of squares of First 'n' natural numbers is

- a. $n(n+1)/2$ b. $n(n+1)(2n+1)/6$ c. n^2 d. None

Qs. 9 : Sum of cubes of First 'n' natural numbers is

- a. $n(n+1)/2$ b. $n(n+1)(2n+1)/6$ c. n^2 d. None

Qs. 10 : Find the value of x such that $8x+4, 6x-2, 2x+7$ are In A.P.

- a. $15/2$ b. 15 c. 7.50 d. Option a or c

Qs. 11 : Last term of the series 5, 7, 9.... up to 21 terms is

- a. 455 b. 35 c. 45 d. 55

Qs. 12 : Last term of the series 0.60, 1.20, 1.80up to 14 terms is

- a. 7.20 b. 8.40 c. 7.80 d. None

Qs. 13 : 2 Arithmetic means between -6.00 and 14 are

- a. $2/3, 22/3$ b. $2/3, 1/3$ c. 0,8 d. None

Qs. 14 A.M. of 33,88 is

- a. 55 b. 66 c. 60.50 d. None of these

Qs. 15 : Number of number divisible by 5 between 508 and 10233 are

- a. 1945 b. 1,04,44,650 c. 98,415 d. None

Qs. 16. Sum of first 1000 natural numbers is

- a. 500500 b. 200200 c. 100100 d. None of these

Qs. 17. Find Sum of all even natural numbers between 497, 1223

- a. 2,13,890 b. 5,16,850 c. 49,700 d. 3,12,180

Qs. 18. Find Sum of all even natural numbers divisible by 9 between 5000 and 80,000

- a. 12,61,12,155 b. 17,70,89,166 c. 99,99,999 d. None

Qs. 19. Sum of certain number of terms of AP $-8, -6, -4, \dots$ is 52. Find Number of terms

- a. 14 b. 13 c. 4 d. None

Qs. 20. Which term of series $12, 9, 6, \dots$ is (-100)

- a. 30^{th} b. 33^{rd} c. 34.333^{th} d. Not Possible

Answers : DD-15

Qs.	Answer	Qs.	Answer
1	A	11	C
2	B	12	B
3	D	13	A
4	C	14	C
5	A	15	A
6	A	16	A
7	A	17	D
8	B	18	B
9	D	19	B
10	D	20	D

Qs. 1 : The number of terms to be taken so that $1 + 2 + 4 + 8 \dots$ will amount to 8191 is

- a. 10 b. 15 c. 13 d. None

Qs. 2 : Product of 3 numbers in G.P is 729 & sum of squares is 819, the numbers are

- a. 2,4,6 b. 3,9,27 c. 3,300,600 d. None

Qs. 3 : Sum of series $1+3+9+27 \dots$ is 364. Find the number of terms

- a. 6 b. 5 c. 7 d. 9

Qs. 4 : Last term of series 1,2,4 upto 10 terms is

- a. 256 b. 1024 c. 512 d. None

Qs. 5 : t_8 of series 6,12,18,24,..... is-

- a. 48 b. 768 c. 1024 d. None

Qs. 6 : 3^{rd} and 5^{th} term of G.P. are 12 & 48. Find the second term of this G.P

- a. 2 b. 36 c. 6 d. None

Qs. 7 : 1,y,9 are in G.P., find the value of y.

- a. 3 b. -3 c. a or b d. None

Qs. 8 : A man saved ₹ 16,500 in 10 years. In each year he saved ₹ 100 more than he saved in the preceding year. How much did he save in the first year.

- a. ₹ 1,200 b. ₹ 1,550 c. ₹ 1,300 d. None

Qs. 9 : Find the sum of all such natural numbers between 1000 & 10000 such that on division by 10 that number leaves a remainder of 8.

- a. 49,72,500 b. 69,52,700 c. 94,42,700 d. 49,52,700

Qs. 10 : 101,105,109 Find the sum of A.P. upto 102 terms.

- a. 90,306 b. 30,906 c. 70,507 d. None

Qs. 11 : $5^3, 5^5, 5^7, 5^9 \dots$ Find the common ratio

- a. 45 b. 5 c. 25 d. 55

Qs. 12 : 2,4,8,16,..... Find t_8

- a. 256 b. 128 c. 512 d. None

Qs. 13 : $2+6+18+54 \dots$ Find the sum of infinite terms.

- a. 80 b. 0 c. Infinity d. -1

Qs. 14 : $120+60+30+15+7.5+\dots$ Find the sum of infinite terms.

- a. 240 b. 0 c. Infinity d. -120

Qs. 15 : $60+6+0.6+0.06+\dots$ Find the sum of infinite terms

- a. 60.66666 b. 66.6666 c. 0 d. Infinity

Qs. 16. Sum of first 243 natural numbers is

- a. 29646 b. 59049 c. 29403 d. None of these

Qs. 17. Find Sum of all odd natural numbers between 100,1000

- a. 2,02,500 b. 2,14,500 c. 2,47,500 d. None

Qs. 18. Find the n^{th} term of A.P. whose sum of n terms is $5n^2+2n$

- a. $10n-3$ b. $3n-10$ c. $30n-3$ d. None

Qs. 19. If t_7 for G.P is 40,820 and t_9 is 63,781.25. Find the common ratio

- a. 1.25 b. -1.30 c. 1.50 d. None

Qs. 20. Last term of series 0.6,1.2,1.8 to 12 terms is -

- a. 9.4 b. 5.4 c. 6 d. None of these

Answers : DD-16

Qs.	Answer	Qs.	Answer
1	C	11	C
2	B	12	A
3	A	13	C
4	C	14	A
5	A	15	B
6	C	16	A
7	C	17	C
8	A	18	A
9	D	19	A
10	B	20	D

Qs. 1 : Sum of all natural numbers divisible by 5 from 100 to 300 is

- a. 8,400 b. 9,000 c. 8,200 d. None

Qs. 2 : Number of odd numbers between 304 to 988

- a. 342 b. 303 c. 987 d. None

Qs. 3 : Sum of all number in A.P. such that their sum is 20 and sum of their squares is 120, then the numbers are -

- a. 2,4,6,8 b. 8,4,0,-4 c. 1,3,5,7 d. 9,11,13,15

Qs. 4 : n^{th} term of the series is $16, 8, 4, \dots$ is $1/2^{17}$. Find n.

- a. 20 b. 22 c. 21 d. None

Qs. 5 : x, 8, y are in G.P and x, y, -8 are in A.P. where x is not equal to y. Find the values of x & y.

- a. $x=16; y=4$ b. $x=4; y=16$ c. $x=-4; y=16$ d. None

Qs. 6 : If m^{th} term of A.P. is n and n^{th} term is m. Then r^{th} term is

- a. 1 b. 0 c. $m+n+r$ d. $m+n-r$

Qs. 7 : 20^{th} term of A.P. is 30 and 30^{th} term is 20, the 45^{th} term of this A.P. is -

- a. 5 b. -5 c. 4 d. -4

Qs. 8 : $(5+x), (10+x), (25+x)$ are in A.P. find the value of x.

- a. 9 b. 2 c. 5 d. Wrong data

Qs. 9 : A person travels from Pune to Mumbai (200 kms) at a uniform speed of 100 km/hr & return (200 km) at the uniform speed of 50 km/hr. Find the Average speed of entire journey.

- a. 75 b. 50 c. 66.6666 d. 100

Qs. 10 : In this series -5, 25, -125, find t_8

- a. 3,90,625 b. 3,00,906 c. 3,70,507 d. None

Qs. 11 : $2+6+12+20+30+42, \dots$ find the sum of 50 terms.

- a. 45,900 b. 44,200 c. 42,400 d. None

Qs. 12 : If for A.P. first term = common difference, then $t_m : t_n =$

- a. 1 b. $m:n$ c. $a:d$ d. $n:m$

Qs. 13 : x, $2x+2, 3x+3, \dots$ are in G.P, then 4^{th} term is .

- a. 22 b. -22 c. 13.5 d. -13.5

Qs. 14 : $2+5+10+17+26+37, \dots$ Find the sum of 28 terms

- a. 7742 b. 7472 c. Can't Find d. Infinity

Qs. 15 : $1+12+36+80+150, \dots$ Find the sum of 22 terms

- a. 67,803 b. -67,803 c. 0 d. Infinity

Qs. 16. In A.P the sum of first 50 terms = sum of first 60 terms. Find sum of first 110 terms.

- a. 0 b. 2,500 c. 12,100 d. 3,600

Qs. 17. For two positive observations G.M. is G.M. of A.M. and H.M.

- a. True b. False c. Partly True d. Wrong Information.

Qs. 18. Find H.M. of 100 & 2500

- a. 192.3077 b. 1300 c. 500 d. None

Qs. 19. $8^2+9^2+10^2+ \dots +22^2 =$

- a. 6355 b. 3655 c. 5633 d. None

Qs. 20. $6+66+666+6666+ \dots$ upto n terms is -

- a. $\frac{5}{9} \left\{ \frac{10(10^n-1)}{9} - n \right\}$ b. $\frac{6}{9} \left\{ \frac{10(10^n-1)}{9} - n \right\}$
b. $\frac{9}{6} \left\{ \frac{10(10^n-1)}{6} - n \right\}$ d. None of these

Answers : DD-17

Qs.	Answer	Qs.	Answer
1	C	11	B
2	A	12	B
3	A	13	D
4	B	14	A
5	A	15	A
6	D	16	A
7	A	17	A
8	D	18	A
9	C	19	B
10	A	20	B

Qs. 1 : Standard format of a linear equation is -

- a. $ax-bx-c=0$ b. $ax+by+c=0$ c. $ay+by+c=0$ d. None

Qs. 2 : Points (30,-25) lie in _____ Quadrant

- a. IV b. II c. III d. None

Qs. 3 : Points satisfying the linear equation $3x+2y=12$

- a. (2,3) b. (3,4) c. (3,2) d. None

Qs. 4 : Equation of X-Axis is.

- a. $x=0$ b. $y=0$ c. $x+y=0$ d. None

Qs. 5 : If the equation of the line is $x = 5$, the line is -

- a. Parallel to X axis b. Perpendicular to Y Axis c. Parallel to Y-Axis d. Both A & B

Qs. 6 : If the equation of the line is $y = \text{constant}$, the line is -

- a. Parallel to X axis b. Perpendicular to Y Axis c. Parallel to Y-Axis d. Both A & B

Qs. 7 : Point of intersection of lines $x+y=50$ and $2x+y=60$ is -

- a. (10,40) b.(25,30) c. (40,10) d. (50,60)

Qs. 8 : Point satisfying the equation $X=15$ is

- a. (15,15) b. (15,0) c. Both d. None

Qs. 9 : Graphical presentation of a linear equation is -

- a. Curve b. Straight Line c. Segment d. Can be anything.

Qs. 10 : If y co-ordinate of a point is zero, then it lies -

- a. In First Quadrant b. On X-Axis c. On Y-Axis d. None

Qs. 11 : Find the point of intersection of $3x+5y=150$ & $4x+y=100$.

- a. (20,10) b. (30,40) c. (50,50) d. None

Qs. 12 : Point of intersection of lines $5x+3y=150$ and $3x+5y=350$ lies in _____ quadrant.

- a. 1st b. 2nd c. 4th d. 3rd

Qs. 13 : Point of intersection of equations $3x+7y = 300$ & $7x+3y = 700$ is-

- a. (100,0) b. (0,100) c. (300,700) d. (700,300)

Qs. 14 : Point of intersection of lines $2x+y=25$ & $x+2y=55$ is in which quadrant?

- a. 1st b. 2nd c. 4th d. 3rd

Qs. 15 : Point on the line $x+3y=240$ is -

- a. (0,80) b. (30,70) c. (60,60) d. All of the above

Qs. 16. Point of intersection of equations $3x+7y = 300$ & $7x+3y = 700$ is in _____ quadrant.

- a. 1st b. 2nd c. 4th d. None

Qs. 17. Point of intersection of line $3x+5y=120$ & $3x+2y=210$ is -

- a. (-30,90) b. (-90,30) c. (90,-30) d. (90,30).

Qs. 18. Point of intersection of line $2x+4y=960$ & $2x+2y=940$ is -

- a. (10,46) b. (46,10) c. (460,10) d. (460,100)

Qs. 19. If x co-ordinate of a point is zero, then it lies -

- a. In First Quadrant b. On X-Axis c. On Y-Axis d. None 6355

Qs. 20. Point of intersection of line $x+2y=40$ & $2x+y=110$ is -

- a. (-10,60) b. (60,-10) c. (60,10) d. (10,60)

Answers : DD-18

Qs.	Answer	Qs.	Answer
1	B	11	D
2	A	12	B
3	A	13	A
4	B	14	B
5	C	15	D
6	D	16	D
7	A	17	C
8	C	18	C
9	B	19	C
10	B	20	B

Qs. 1. If $3x+2y = 9$ and $x + 3y = 10$ then x and y are

- a. 1,4 b. 2,1.50 c. 3,0 d. 1,3

Qs. 2. Calculate the number such that it is equal to three times its difference from 56.

- a. 32 b. 14 c. 42 d. None of these

Qs. 3. What is the solution of the system of simultaneous linear equations $3x + 2y + 17 = 0$ & $5x - 6y - 9 = 0$;

- a. $x = 3, y = 2$ b. $x = -3, y = 4$ c. $x = 3, y = -4$ d. $x = -3, y = -4$

Qs. 4. Sheikh chili says is to his son, "Seven years ago I was seven times as old as you were, and three years later I shall be three times as old as you will be." Find the present age of Sheikh chili's son.

- a. 12 years b. 15 years c. 5 years d. 7 years

Qs. 5. A number consist of three digits of which the middle one is zero and the sum of the other digits is 8. the number formed by interchanging the first and third digits is more than the original number by 396. Find the number

- a. 306 b. 206 c. 305 d. None

Qs. 6. X and Y each have some money. If X given ₹ 30 to Y, then Y will have twice the money left with X. But if Y gives ₹ 10 to X, then X will have thrice as much as is left with Y. Then X and Y have respectively.

- a. ₹ 54, ₹ 62 b. ₹ 62, ₹ 34 c. ₹ 72, ₹ 44 d. ₹ 34, ₹ 62

Qs. 7. The set of simultaneous equations $4x + 2y = 0$ and $6x + 3y = 10$ has :

- a. $x = 1, y = 2$ as solution b. $x = 0, y = 0$ and $x = 1, y = -2$ as solutions
c. $x = 0, y = 0$; $x = -1, y = 2$ and $x = 1, y = -2$ as solutions d. An infinite number of solutions

Qs. 8. A two-digit number is such that the product of the digits is 8. When 18 is added to the number, the digits are reversed. Find the number

- a. 18 b. 24 c. 81 d. 42

Qs. 9. If $x+2 = 3$ then $x = ?$

- a. 1 b. 6 c. 7 d. 8

Qs. 10. If $x/2 + y/3 = 2$ and $2x + 3y = 13$ then $(x,y) = ?$

- a. (2,3) b. (2,2) c. (1,1) d. None of these

Qs. 11. Graphical presentation of linear equation is _____

- a. Straight Line b. Circle c. Parabola d. Hyperbola

Qs. 12. There are _____ number of quadrants on a Graph paper

- a. 1 b. 2 c. 3 d. 4

Qs. 13. The inequalities representing First Quadrant are _____

- a. $x > 0$ and $y > 0$ b. $x > 0$ and $y < 0$ c. $x < 0$ and $y > 0$ d. $x < 0$ and $y < 0$

Qs. 14. The Line $x = 67$ is parallel to

- a. X axis b. Y axis c. Z axis d. None of these

Qs. 15. A line passes through the point (2,2) and (3,3), Equation of that line is

- a. $x-y=0$ b. $x+2y=6$ c. $2x+3y=10$ d. None of these

Qs. 16. On solving 2 linear equations simultaneously if we get $x=30$ and $y=50$ then point of intersection of 2 lines is

- a. (30,50) b. (50,30) c. (50,0) d. Can't say

Qs. 17. The sum of 2 numbers is 10 and their difference is 2 then the numbers are

- a. 4,6 b. -3,-2 c. -4,-6 d. None of these

Qs. 18. Divide 56 in 2 parts such that three times of first part exceed the one third of second by 48. The parts are

- a. 20,36 b. 25,31 c. 24,32 d. None

Qs. 19. $x+3 = 10x + 20$ then $x = ?$

- a. $-17/9$ b. $17/9$ c. $9/17$ d. None

Qs. 20. In number 54 place value of 5 is

- a. 50 b. 4 c. 54 d. 44

Answers : DD-19

Qs.	Answer	Qs.	Answer
1	D	11	A
2	C	12	D
3	D	13	A
4	A	14	B
5	B	15	A
6	B	16	A
7	D	17	A
8	B	18	A
9	A	19	A
10	A	20	A

1. If $x + 8y = 19$ and $2x + 11y = 28$ then x, y are
a. 2,3 b. 3,2 c. 3,3 d. 2,2
2. I am three times old as my son. Five years later, I shall be 2.5 times as old as my son. How old am I ?
a. 35 years b. 15 years c. 20 years d. 45 years
3. Find x if $9x + 1 = 5x + 17$
a. -4 b. -3 c. 3 d. None of these
4. $(12x+1)/4 = (13x-1)/5 + 3$ is true for
a. $x = 1/8$ b. $x = 2$ c. $x = 5/8$ d. $x = 51/8$
5. The values of x and y satisfying the pair $(x/2) + (y/3) = 2$, $x + 2y = 8$ are given by the pair.
a. 3,2 b. -2,-3 c. 2,3 d. None of these
6. A lady has only 25 paise and 50 paise coins in her purse. If in all she has 40 coins following ₹ 12.75. How many of each type does she have?
a. 18,23 b. 30,8 c. 29,11 d. None of these
7. A number consist of 2 digits is 7 times of sum of digits. When 27 is subtracted from the number, the digits are reversed, the number is
a. 63 b. 36 c. 56 d. None of these
8. A train travel a distance of 300 km at a constant speed. If speed of train is increased by 5 km/hr, the journey would have taken 2 hours less. The original speed of the train is
a. 25 km/hr b. 28 km/hr c. 27 km/hr d. None of these
9. The equation of the line passing through is (3,5) and (5,3) is
a. $x + y = 8$ b. $2x + 3y = 30$ c. $8x + 8y = 64$ d. $x - y = 2$
10. slope of the line parallel to X- axis is
a. Zero b. Not defined c. 2 d. 3
11. Slope of the line perpendicular to to Y- axis is
a. Zero b. Not defined c. 2 d. 3
12. The sum of two digit number and number obtained by reversing the digits is 121, and digits differ by 3. The number is
a. 37 b. 47 c. 58 d. 69
13. By selling a car at a price of ₹ 72,000 a person made profit of 20% on cost. Find cost of the car?
a. ₹ 84,000 b. ₹ 72,000 c. ₹ 50,000 d. ₹ 60,000
14. Factors of quadratic equation $x^2 - x - 6 = 0$ are
a. -3 and 2 b. -2 and 3 c. $(x+2)(x-3)$ d. $(x-2)(x+3)$
15. Divide 78 in two parts such that their product is 1512.
a. 52,26 b. 62,16 c. 42,36 d. 72,6

16. The sum of two numbers, one of which is $\frac{2}{3}$ times of other, is 50. Find two numbers

- a. 50,30 b. 20,30 c. 15,35 d. 10,40

17. A number consist of two digits. The digit at ten's place is two times the digit at unit place. The number formed by reversing the digits, is 27 less than the original number. Find the original number.

- a. 63 b. 42 c. 84 d. None of these

18. Divide 300 in two parts so that half of one part be less than the other by 48

- a. 168,132 b. 150,150 c. 140,160 d. 172,128

19. Find the values of x, y for $x+8y = 19$, $2x+11y = 28$

- a. 3,3 b. 2,3 c. 3,2 d. None of these

20. The line $x=25$ will be parallel to

- a. X-axis b. Y-axis c. Both d. None of these

21. Point $(2, -1/2)$ lie in

- a. 1st quadrant b. 3rd quadrant c. 4th quadrant d. 2nd quadrant

22. The lines $x+y = 0$, $x-y = 0$ will intersect at

- a. (0,0) b. Somewhere on X-axis c. Somewhere on Y-axis d. Can't say

23. The equation of the line passing through (0,8),(9,0) is

- a. $8x+9y = 1$ b. $9x+8y = 72$ c. $8x+9y = 72$ d. None of these

24. The equation of the line passing through (8,0),(16,0) is

- a. $8x+16y = 1$ b. $16x+8y = 128$ c. $y = 0$ d. None of these

25. $a^3+b^3 =$

- a. $(a^2+ab+b^2)(a+b)$ b. $(a^2+ab+b^2)(a-b)$ c. $(a^2-ab+b^2)(a+b)$ d. None

26. Find two consecutive positive even integers whose sum is 94.

- a. 46,48 b. 49,45 c. 54,40 d. None of these

27. A number consist of two digits of which ten's digit exceeds the unit digit by 6. The number itself is equal to 10 times the sum of digits. The number is:

- a. 60 b. 93 c. 71 d. None of these

28. If $x^2 + 6x = -9$ then the roots of the equation are

- a. -3,-3 b. -3,3 c. 2,4 d. None of these

29. The wages of 8 men and 6 boys amount to ` 33. If 4 men earn ` 4.50 more than 5 boys. Determine the wages of each man and boy?

- a. ` 1.50, ` 3 b. ` 3, ` 1.50 c. ` 2.50, ` 2 d. ` 2, ` 2.50

30. Line is a set of all the points satisfying the given _____

- a. Linear Equation b. Quadratic equation c. Cubic equation d. None of these

Answers : DD-20

Qs.	Answer	Qs.	Answer
1	B	16	B
2	D	17	A
3	D	18	A
4	D	19	C
5	C	20	B
6	C	21	C
7	A	22	A
8	A	23	C
9	C	24	C
10	A	25	C
11	A	26	A
12	B	27	A
13	D	28	A
14	C	29	B
15	C	30	A

- Qs. 1. The sum of three positive even numbers is 15 less than three-fourth of 60. What is the middle number
 a 15 b. 10 c. 12 d. None of these
- Qs. 2. If p and q are roots of the quadratic equation $2x^2-5x+7=0$, then value of $(2p+2q)$ is
 a $5/2$ b. $-5/28$ c. 10 d. $10/2$
- Qs. 3. If $b^2 = 4ac$ in a quadratic equation then
 a Roots are imaginary b. Roots are equal
 c. Roots are not equal d. Roots are reciprocals of each other
- Qs. 4. In what time the sum of money will double itself with 16.66% p.a. simple interest
 a 16 years b. 10 years c. 6 years d. 3 years
- Qs. 5. At simple interest, a sum doubles after 20 years. The rate of interest p.a. is equal to
 a 10% p.a. b. 20% p.a. c. 5.50 % p.a. d. None of these
- Qs. 6. A sum of ₹12,000 deposited at compound interest becomes double after 5 years. After 20 years it will become:
 a ₹1,29,000 b. ₹1,92,000 c. ₹1,24,000 d. None of these
- Qs. 7. If one fifth of one third of one half is 15. then the number is
 a 400 b. 450 c. 500 d. None of these
- Qs. 8. Three-fourth of one-fifth of a number is 60. The number is-
 a 300 b. 400 c. 1200 d. None of these
- Qs. 9. The sum of the digits of a two digit number is 12. if the digits are reversed, the number is decreased by 18. Find the number
 a 75 b. 93 c. 84 d. 57
- Qs. 10. At what rate p.a. will ₹1000 amount to ₹1331 in 3 years? (The interest is compounded annually)
 a 10% b. 12% c. 11% d. None of these
- Qs. 11. Find $1+2+3+4+5+\dots+105$
 a 5000 b. 5560 c. 5565 d. None of these
- Qs. 12. Five years ago, I was thrice as old as my son and ten years later I shall be twice as old as my son. How old are we now?
 a 50,20 b. 45,15 c. 65,25 d. None of these
- Qs. 13. A man deposits ₹2000 in a Bank at 4% p.a. and ₹3000 in UTI at 14% p.a. Find the rate of interest for the whole sum.
 a 10% b. 5% c. 15% d. None of these
- Qs. 14. If one root of the equation $5x^2+2x+k=0$ is reciprocal of other, then $k=?$
 a -5 b. $1/5$ c. 25 d. None of these
- Qs. 15. If the equation $x^2-(p+4)x+2p+5=0$ has equal roots, then $p=?$
 a ± 1 b. ± 2 c. 2 d. -2

Qs. 16. If one root of the equation $x(x-6)=3k(1-x)$ is negative of other, Then value of k is

- a 1 b. 2 c. 3 d. None of these

Qs. 17. $x, x-4, x+5$ are the factors of the left-hand side of the equation

- a $x^3+2x^2-x-2=0$ b. $x^3+x^2-20x=0$ c. $x^3-3x^2-4x+12=0$ d. None of these

Qs. 18. Roots of the cubic equation $x^3+7x^2-21x-27=0$ are

- a -3,-9,-1 b. 3,-9,-1 c. 3,9,1 d. -3,9,1

Qs. 19. If $4x^3+8x^2-x-2=0$ then $2x+3=?$

- a 4,-1,2 b. -4,2,1 c. 2,-4,-1 d. None of these

Qs. 20. The distance between the points A(a,2) and B(3,a) is 5 units, Then a=?

- a 1 or 4 b. -2 or 3 c. -1 or 6 d. None of these

Answers : DD-21

Qs.	Answer	Qs.	Answer
1	B	11	C
2	D	12	A
3	B	13	A
4	C	14	D
5	D	15	B
6	B	16	B
7	B	17	B
8	B	18	B
9	A	19	A
10	A	20	C

Qs. 1. In AP terms of sequence are increased or decreased by fixed number

- a. True b. Partly true c. False d. None

Qs. 2. Three numbers a,b,c, are in AP if and only if $b-a=c-b$ i.e. if and only if $a+c=2b$

- a. True b. Partly true c. False d. None

Qs. 3. In a GP any term may be obtained by multiplying the preceding term by common ratio of GP

- a. True b. Partly true c. False d. None

Qs. 4. If 'a' is the first term and 'r' the common ratio of finite GP consisting of m terms then nth term from the end is given by $a.r^{m-n}$

- a. True b. Partly true c. False d. None

Qs. 5. Three numbers a,b,c are in GP if and only if $b/a=c/b$ i.e. and if $b^2=ac$

- a. Partly True b. True c. False d. None

Qs. 6. Determine 25th term of AP whose 9th term is -6 and common difference is 5/4

- a. 16 b. 18 c. 12 d. 14

Qs. 7. Which term of AP 5,13,21..... is 181

- a. 21st b. 22nd c. 23rd d. 24th

Qs. 8. Determine k so that $K+2$, $4k-6$ and $3k-2$ are three consecutive terms of an AP

- a. 5 b. 7 c. 9 d. 3

Qs. 9. The ratio of the 7th to 3rd term of AP is 12:5. Find the ratio of 13th to 4th term

- a. 8:5 b. 9:4 c. 7:3 d. 10:3

Qs. 10. If 7 times 7th term of an AP is equal to 11 times its 11th term then 18th term of AP is

- a. 1 b. 2 c. 0 d. 3

Qs. 11. The 4th term of an AP is equal to 3 times the first term and 7th term exceeds twice the third term by 1. Find the first term

- a. 3 b. 5 c. 7 d. 9

Qs. 12. If the 9th term of AP is 99 and 99th term is 9 find 108th term

- a. 0 b. 2 c. 4 d. 6

Qs. 13. Determine the sum of first 35 terms of AP if $t_2=2$ and $t_7=22$

- a. 2510 b. 2310 c. 2710 d. 2910

Qs. 14. If the 5th and 12th term of an AP are 30 and 65 respectively. Find S_{20}

- a. 1175 b. 1250 c. 1150 d. 1350

Qs. 15. If 12th term of AP is -13 and sum of first 4 terms is 24 what is the sum of first 10 terms

- a. 0 b. 2 c. 1 d. 4

Qs. 16. The sum of a series in AP is 525. Its 1st term is 3 and last term is 39. Find the common difference

- a. 3/2 b. 3/3 c. 2/3 d. 1/3

Qs. 17. Find common difference of an AP whose first term is 100 and sum of whose first 6 terms is five times the sum of next 6 terms

- a. -10 b. -15 c. -20 d. -5

Qs. 18. Sum of the series $51+50+49+\dots+21$ is

- a. 1116 b. 1112 c. 1128 d. 1124

Qs. 19. The sum of n terms of an AP is $3n^2+4n$ then find nth term

- a. $5n+2$ b. $6n+1$ c. $8n+3$ d. $7n+3$

Qs. 20. How many terms of AP 1,4,7..... are needed to give the sum 715?

- a. 33 b. 22 c. 24 d. 27

Answers : DD-22

Qs.	Answer	Qs.	Answer
1	A	11	A
2	A	12	A
3	A	13	B
4	A	14	C
5	B	15	A
6	D	16	A
7	C	17	A
8	D	18	A
9	D	19	B
10	C	20	B

Qs. 1. The first three terms of sequence when s_n is $n^2 - 2n$ are

- a. -1, 0, 3 b. 1, 0, 2 c. -1, 0, -3 d. None of these

Qs. 2. The last term of the A.P. 0.6, 1.2, 1.8, To 13 terms is

- a. 7.7 b. 8.7 c. 7.8 d. None of these

Qs. 3. If the sum of first 20 terms is equal to the sum of first 15 terms of an AP., then the sum of first 35 terms is equal to: .

- a. -35 b. 70 c. 15 d. None of these

Qs. 4. The sides of a right-angled triangle are in A.P. The ratio of sides is :

- a. 3 : 5 : 8 b. 2 : 3 : 4 c. 3 : 4 : 5 d. 5 : 8 : 3

Qs. 5. Which term of the G.P. 5, 10, 20, 40, is 1280?

- a. 11th b. 9th c. 8th d. 12th

Qs. 6. If a, G, b are in G.P., then:

- a. $2G = ab$ b. $G^2 = ab$ c. $G = \frac{1}{2} ab$ d. $G = \frac{1}{2} (a + b)$

Qs. 7. A bond has face value of ₹ 1000 and mature in 5 years with interest rate of 8%. At what price the bond may be purchased now if the buyer requires 10% ROI?

- a. 303 b. 621 c. 924 d. None of these

Qs. 8. A sum of money doubles itself in 10 years with simple interest. In how many years would it will become 5 times of original sum ?

- a. 20 years b. 50 years c. 25 years d. 40 years

Qs. 9. Manoharlal lend ₹ 10,000 in four parts. If he gets 8% on Rs. 2,000; 7 % on ₹ 4,000 and 8½% on ₹ 3,000, what percent must he get for the remainder, if the average interest is 10%?

- a. 9 ½% b. 15.50% c. 30.50% d. None of these

Qs. 10. If $A = ₹ 1000$, $n = 2$ years, $r = 6\%$ p.a. compound interest payable half-yearly then principal (P) is

- a. 888.480 b. 880 c. 800 d. None of these

Qs. 11. Ram is confused whether to invest at 9% p.a. compounded monthly or 9.25% p.a. simple interest. The student decided to find effective rate of interest, which is

- a. 9% b. 9.25% c. 9.38% d. None of these

Qs. 12. At what rate percent of compound interest ₹ 1,250 will yield Rs. 102 in 2 years?

- a. 6% b. 10% c. 3% d. 4%

Qs. 13. Find the future value of an annuity of ₹ 500 is made annually for 7 years at interest rate of 14% compounded annually.

- a. ₹ 5635.25 b. ₹ 5365.25 c. ₹ 6535.25 d. ₹ 6355.25

Qs. 14. The effective rate of interest corresponding a nominal rate of 7% p.a. convertible quarterly is

- a. 7% b. 7.30% c. 7.10% d. None of these

Qs. 15. The effective rate of interest corresponding to a nominal rate 3% p.a. payable half yearly is

- a. 3.2% p.a. b. 3.25% p.a. c. 3.0225% p.a. d. None of these

Qs. 16. Calculate the number such that it is equal to three times its difference from 56.

- a. 32 b. 14 c. 24 d. None of these

Qs. 17. What is the solution of the system of simultaneous linear equations

$$3x + 2y + 17 = 0 \text{ \& } 5x - 6y - 9 = 0;$$

- a. $x = 3, y = 2$ b. $x = -3, y = 4$ c. $x = 3, y = -4$ d. $x = -3, y = -4$

Qs. 18. Find the nominal rate compounded semi-annually and equivalent to 5% effective.

- a. 5.0625% b. 5.06% c. 5% d. 4.94%

Qs. 19. Points X and Y are 60 km apart. X bus starts from X and another from Y at the same time. If they go in the same direction they meet in 6 hours and if they go in opposite directions, they meet in 2 hours. The speed of the bus with greater speed is :

- a. 50m/hr b. 20 km/hr c. 30 km/hr d. 40 km/hr

Qs. 20. Anand starts his job with a certain monthly salary and earns a fixed increment every year. If his salary was ₹6,500 after 4 years of service and ₹7,000 after 9 years of service. What was his initial salary :

- a. ₹5,000 b. ₹6,000 c. ₹6,100 d. ₹5,400

Answers : DD-23

Qs.	Answer	Qs.	Answer
1	D	11	C
2	C	12	D
3	D	13	B
4	C	14	D
5	B	15	C
6	B	16	D
7	B	17	D
8	D	18	D
9	C	19	B
10	A	20	C

Qs. 1. A man purchased 56 stamps of 50 paise and 1 rupee. The total amount he spent was ₹ 55.50. What is the number of 50 paise and 1 rupee stamps purchased.

- a. 38 and 18 respectively b. 46 and 10 respectively
c. 27 and 29 respectively d. None

Qs. 2. Suppose α, β are the roots of the equation $2x^2 - 5x + 7 = 0$, then the equation whose roots are $(2\alpha + 3\beta)$ and $(3\alpha + 2\beta)$ is :

- a. $2x^2 + 25x + 82 = 0$ b. $2x^2 - 25x - 82 = 0$ c. $2x^2 - 25x + 82 = 0$ d. $2x^2 + 25x - 82 = 0$

Qs. 3. If the rate of simple interest is 15% p.a., the amount that would fetch interest of ₹ 5,000 per annum is

- a. ₹ 33,333.33 b. ₹ 50,000 c. ₹ 30,000 d. ₹ 32,000

Qs. 4. Due to a fall in the rate of interest from 13% p.a. to 12½% p.a., a moneylender's yearly income diminishes by ₹ 104. His capital is

- a. ₹ 20,400 b. ₹ 20,800 c. ₹ 22,300 d. ₹ 24,000

Qs. 5. Simple interest on a certain sum at a certain rate is 9/16 of the sum. If the number representing rate percent and time in years be equal, then time is

- a. 7 1/4 years b. 6 ½ years c. 6 1/4 years d. 7 ½ years

Qs. 6. At simple interest, a sum doubles after 30 years. The rate of interest per annum is equal to :

- a. 5% b. 10% c. 3.75% d. None of these

Qs. 7. The difference between the interests received from two different banks on ₹ 500 for 2 years, is ₹ 2.50. The difference between their rates is:

- a. 2% b. 0.5% c. 2.5% d. 0.25%

Qs. 8. The first and last term of AP are -4 and 146 and sum of AP is 7171. Find the number of terms in AP and common difference

- a. 101, 3/2 b. 101, 2 c. 100, 3/2 d. None of these

Qs. 9. A man repays a loan of ₹ 3250/- by paying ₹ 20 in the first month and then increases the payment by ₹ 15 every month. How long will it take to clear his loan

- a. 1 Year and 9 months b. 1 Year and 8 months c. 21 months d. Can't say

Qs. 10. Find the sum of all odd numbers of four digits which are divisible by 9

- a. 25,56,000 b. 45,54,000 c. 27,54,000 d. None of these

Qs. 11. The 6th term from end of G.P. 8,4,2,1,....., 1/1024 is

- A. 1/64 b. 32 c. 1/32 d. None of these

Qs. 12. A person divides his journey 3 equal parts and decides to travel on 3 parts at the speeds of 40,30,15 km/hr respectively. Find the average speed of whole journey.

- A. 30 km/hr b. 24 km/hr c. 35 km/hr d. None of these

Qs. 13. If Raja can walk a certain distance in 50 days when he rest 9 hours each day,. How long will it take him to walk twice as far if he walk twice as fast and rest twice as long each day?

- a. 125 days b. 25 days c. 50 days d. 100 days

Qs. 14. Find present value of Annuity due of ₹ 3500 for 10 years at the rate of 12% p.a.

- a. ₹ 35,000 b. ₹ 38,000 c. ₹ 68,791 d. None of these

Qs. 15. The sum of two numbers is 15 and their product is 50. sum of their reciprocals is

- a. 0.25 b. 0.30 c. 0.20 d. 0.40

Qs. 16. If 1,ab,9 are in GP then the value of ab is

- a. 3 b. -3 c. a or b d. None of these

Qs. 17. If $x^3 - 25x^2 - 50x + 3000 = 0$ then the roots of the equation are

- a. 15,20,10 b. 17,-19,5 c. 10,19,-7 d. None of these

Qs. 18. If sum of p terms of AP is the same as sum of q terms. What is sum of (p+q) terms of AP?

- a. Can't find b. $(p+q)/2$ c. 1 d. 0

Qs. 19. If the ratio of 7th term to the 3rd term of AP is 12:5. Find the ratio of 13th to 4th term

- a. 8:5 b. 9:4 c. 7:3 d. 10:3

Qs. 20. The sum of series in AP is 525. Its first term is 3 and last term is 39. Find the common difference.

- a. $3/2$ b. $3/3$ c. $2/3$ d. $1/3$

Answers : DD-24

Qs.	Answer	Qs.	Answer
1	D	11	C
2	C	12	B
3	A	13	A
4	B	14	D
5	D	15	B
6	D	16	C
7	D	17	D
8	A	18	D
9	B	19	D
10	C	20	A

Qs. 1. If p, q are roots of the equation $x^2 - 13x + 81 = 0$. Find quadratic equation, whose roots are $(p^2 + q^2)$ $(p^3 + q^3)$
 a. $x^2 + 955x - 6734 = 0$ b. $x^2 + 599x - 7346$ c. $x^2 + 559x - 4673 = 0$ d. $x^2 + 999x - 3674 = 0$

Qs. 2. Suppose α, β are the roots of the equation $2x^2 - 5x + 7 = 0$, then the Quadratic equation whose roots are $(\alpha + \beta)$ and $(\alpha\beta)$ is :

a. $2x^2 + 25x + 82 = 0$ b. $4x^2 - 24x + 35 = 0$ c. $2x^2 - 25x + 82 = 0$ d. $2x^2 + 25x - 70 = 0$

Qs. 3. If $b^2 - 4ac = 0$ then roots of the Quadratic equation are:

a. Real, Rational, Equal b. Real, irrational, Unequal c. Real, Rational, Unequal d. Complex

Qs. 4. If $b^2 - 4ac = 25$ then roots of the Quadratic equation are:

b. Real, Rational, Equal b. Real, irrational, Unequal c. Real, Rational, Unequal d. Complex

Qs. 5. If $b^2 - 4ac = -36$ then roots of the Quadratic equation are:

c. Real, Rational, Equal b. Real, irrational, Unequal c. Real, Rational, Unequal d. Complex

Qs. 6. If $b^2 - 4ac = 484$ then roots of the Quadratic equation are:

d. Real, Rational, Equal b. Real, irrational, Unequal c. Real, Rational, Unequal d. Complex

Qs. 7. If $b^2 - 4ac = 89$ then roots of the Quadratic equation are:

a. Real, Rational, Equal b. Real, irrational, Unequal c. Real, Rational, Unequal d. Complex

Qs.8. If α, β are the roots of the equation $2x^2 - 5x + 7 = 0$, then the value $(\alpha + \beta)$ is :

a. $5/2$ b. $7/2$ c. $-5/2$ d. None of these

Qs.9. If α, β are the roots of the equation $2x^2 - 5x + 7 = 0$, then the value $(2\alpha + 2\beta)$ is :

a. $25/2$ b. 5 c. $-5/2$ d. None of these

Qs.10. If α, β are the roots of the equation $2x^2 - 5x + 7 = 0$, then the value $(\alpha\beta)^2$ is :

a. $25/4$ b. $49/64$ c. $49/4$ d. None of these

Qs.11. If α, β are the roots of the equation $2x^2 - 5x + 7 = 0$, then the value $(\alpha^2 + \beta^2)$ is :

a. $-3/4$ b. $4/3$ c. 7 d. None of these

Qs.12. If α, β are the roots of the equation $x^2 - 11x + 15 = 0$, then the value $(\alpha + \beta)$ is :

a. 11 b. $-11/2$ c. 15 d. None of these

Qs.13. If α, β are the roots of the equation $x^2 - 11x + 15 = 0$, then the value $(\alpha^2 + \beta^2)$ is :

a. 121 b. 11 c. 91 d. None of these

Qs.14. If α, β are the roots of the equation $x^2 - 11x + 15 = 0$, then the value $(\alpha^3 + \beta^3)$ is :

a. 3125 b. 225 c. 386 d. 836

Qs.15. If α, β are the roots of the equation $x^2 - 11x + 15 = 0$, then the value $(\alpha/\beta + \beta/\alpha)$ is :

a. $91/121$ b. $121/91$ c. $91/15$ d. $15/91$

Qs.16. If α, β are the roots of the equation $x^2 - 11x + 15 = 0$, then the value $(\alpha - \beta)^2$ is :

a. 225 b. 911 c. 121 d. 61

Qs.17. If $a = c$ then roots of the Quadratic equation are

- a. Equal b. Reciprocals of each other c. Equal but opposite in sign d. Can't Say

Qs.18. If $b=0$ then roots of the Quadratic equation are

- a. Equal b. Reciprocals of each other c. Equal but opposite in sign d. Can't Say

Qs.19. If $b^2 - 4ac = 0$ then roots of the Quadratic equation are

- a. Equal b. Reciprocals of each other c. Equal but opposite in sign d. Can't Say

Qs.20. If $b^2 - 4ab = 0$ then roots of the Quadratic equation are

- a. Equal b. Reciprocals of each other c. Equal but opposite in sign d. Can't Say

Answers : DD-25

Qs.	Answer	Qs.	Answer
1	A	11	A
2	B	12	A
3	A	13	C
4	C	14	D
5	D	15	C
6	C	16	D
7	B	17	B
8	A	18	C
9	B	19	A
10	C	20	D

Qs. 1. A person travels 300 km to a place at uniform speed of 160km/hr and returns at a uniform speed of 145 km/hr , find the average speed of entire journey.

- a. 150.12 b. 160 c. 152.13 d. 145

Qs. 2. If same amount is received at equal intervals at the beginning of every year , it is known as

- a. An ordinary annuity b. annuity regular c. annuity due d. all of the above

Qs.3. If roots of quadratic equation $5px^2-13x^2+22px-18x+88p-270=0$ are reciprocal . Find p.

- a.257/83 b. -257/83 c.83/257 d. none

Qs.4 . 55,65,75,95,105 are in _____

- a. AP b.GP c. Both d. None

Qs.5. 23,23,23,23,23 are in _____

- a. AP b.GP c. Both d. None

Qs. 6. $(2p-81), (13p-163), (19p-1)$ are in AP , Find P

- a. 162 b.244 c.48.8 d. None

Qs.7. $1^2+2^2+3^2 + 4^2+ \dots + 12^2 =$

- a.650 b.550 c.625 d. none

Qs.8 Point of intersection of lines $2x+3y =72$ & $x=20$ lies

- a. In first quadrant b. On Y axis c. In third quadrant d. On X axis

Qs.9. $3x/30 =90/30$ find x

- a. 90 b. 30 c.60 d. none

Qs.10. Sum of two numbers is 88 and the difference of first number and half of second number is 10.

Find the numbers.

- a. 32, 56 b. 44, 44 c. 36,52 d. 30, 58

Qs. 11. $X+5y=36$; $(x+y)/(x-y) = 5/3$. Find x,y.

- a. 20,16 b. 16,4 c. 16,16 d. None

Qs. 12. Find the roots of equation $x^2-8x-20=0$

- a. 10,-2 b. -10,2 c. 10,2 d. None of these.

Qs. 13. Find the roots of equation $x^2-12x+20=0$

- a. 10,-2 b. -10,2 c. 10,2 d. None of these.

Qs. 14. Find quadratic equation whose roots are $(8+\sqrt{5})$, $(8-\sqrt{5})$ is

- a. $x^2+16x-59=0$ b. $x^2-16x+59=0$ c. $x^2+16x+59=0$ d. None

Qs. 15. Roots of quadratic equation $5kx^2-3x^2+18x-13kx+35=0$ are reciprocals of each other. Find k.

- a. 35/8 b. 38/5 c. 39/5 d. None of the above

Qs. 16. Roots of quadratic equation $15kx^2-13x^2-35px+2x-9k+28=0$ are reciprocals of each other. Find k.

- a. 41/24 b. 24/41 c. 41/42 d. None of the above

Qs. 17. Roots of quadratic equation $8x^2-35x+22k-13x^2+32=0$ are equal. Find k.

- a. $88/373$ b. $-373/88$ c. $-88/373$ d. None of the above

Qs. 18. Roots of quadratic equation $15x^2-13kx^2+8px-32x+3px-8k+3p-63=0$ are equal but opposite in sign. Find p.

- a. $32/33$ b. $32/11$ c. $11/32$ d. None of the above

Qs. 19. If p,q are roots of $10x^2-x-7=0$. Find quadratic equation whose roots are (p+q), pq.

- a. $10x^2+6x-7=0$ b. $100x^2+60x+7=0$ c. $100x^2+60x-7=0$ d. None

Qs. 20. Find quadratic equation whose roots are $-2/3$ & $5/17$.

- a. $15x^2+19x+10=0$ b. $15x^2+19x-10=0$ c. $51x^2+19x-10=0$ d. None

Answers : DD-26

Qs.	Answer	Qs.	Answer
1	C	11	B
2	C	12	A
3	A	13	C
4	D	14	B
5	C	15	B
6	C	16	A
7	A	17	B
8	A	18	B
9	B	19	C
10	C	20	C

Qs. 1. Find quadratic equation whose roots are $-1/5$ & $3/8$.

- a. $4x^2+7x+3=0$ b. $40x^2-7x-3=0$ c. $41x^2+3x-7=0$ d. None

Qs. 2. Nature of roots of an equation $5x^2+8x-1=0$ are

- a. Real, Rational, Unequal b. Real, Irrational, Unequal
c. Real, Rational, Equal d. Complex/Imaginary

Qs.3. Nature of roots of an equation $x^2-1=0$ are

- a. Real, Rational, Unequal b. Real, Irrational, Unequal
c. Real, Rational, Equal d. Complex/Imaginary

Qs.4. Nature of roots of an equation $25x^2+10x+1=0$ are

- a. Real, Rational, Unequal b. Real, Irrational, Unequal
c. Real, Rational, Equal d. Complex/Imaginary

Qs.5. Nature of roots of an equation $2x^2-2x+50=0$ are

- a. Real, Rational, Unequal b. Real, Irrational, Unequal
c. Real, Rational, Equal d. Complex/Imaginary

Qs.6. Nature of roots of an equation $7x^2-9x-20/7=0$ are

- a. Real, Rational, Unequal b. Real, Irrational, Unequal
c. Real, Rational, Equal d. Complex/Imaginary

Qs.7. Nature of roots of an equation $8x^2+5x=0$ are

- a. Real, Rational, Unequal b. Real, Irrational, Unequal
c. Real, Rational, Equal d. Complex/Imaginary

Qs.8. Find the roots of equation $8x^2-15x+4.50=0$.

- a. $2/3, 3/8$ b. $3/2, 8/3$ c. $2/3, 8/3$ d. $3/2, 3/8$

Qs.9. Find the roots of equation $x^2-2px+p^2-q^2=0$.

- a. p, q b. $(p+q), (p-q)$ c. $(q-p), (p-q)$ d. None of these.

Qs. 10. Find the quadratic equation whose roots are $1/3, -1/3$.

- a. $90x^2+1=0$ b. $3x^2+1=0$ c. $9x^2-1=0$ d. $3x^2-1=0$

Qs. 11. Find the quadratic equation whose roots are 9, -9.

- a. $9x^2+81=0$ b. $x^2-81=0$ c. $9x^2-1=0$ d. $9x^2+1=0$

Qs.12. Find the roots of equation $x^2-44x+484=0$.

- a. 44,44 b. 22, 22 c. 1,22 d. 0,44

Qs. 13. Find the quadratic equation whose roots are 0, 19.

- a. $x(x-19)=0$ b. $x^2-19x=0$ c. $x^2=19x$ d. All of the above

Qs. 14. Find the quadratic equation whose roots are -8,0.

- a. $x(x-8)=0$ b. $x^2+8x=0$ c. $x^2=8x$ d. All of the above

Qs. 15. Find the quadratic equation whose roots are -10,5.

- a. $x^2+5x-50=0$ b. $x^2+10x+50=0$ c. $x^2=10x$ d. None of the above

Qs. 16. Find the sum of roots of the equation $x^2-25=0$

- a. 0 b. -25 c. 25 d. None of the above

Qs. 17. Find the sum of roots of the equation $5x^2-33kx+85p-125=0$

- a. 0 b. $-33k/5$ c. $33k/5$ d. None of the above

Qs. 18. If p,q are roots of quadratic equation $3x^2-x-3=0$, find the value of $2p+2q$

- a. $2/3$ b. -1 c. $1/3$ d. None of the above

Qs. 19. If p,q are roots of quadratic equation $3x^2-x-3=0$, find the value of p^3+q^3

- a. $27/28$ b. $-28/27$ c. $28/27$ d. None of the above

Qs. 20. If p,q are roots of quadratic equation $3x^2-19x-1=0$, find the quadratic equation whose roots are p/q ; q/p

- a. $3x^2-19x-1=0$ b. $3x^2+367x+3=0$ c. $3x^2+367x-3=0$ d. None

Answers : DD-27

Qs.	Answer	Qs.	Answer
1	B	11	B
2	B	12	B
3	A	13	D
4	C	14	B
5	D	15	A
6	B	16	A
7	A	17	C
8	D	18	A
9	B	19	C
10	C	20	B

Qs. 1. Inequalities representing 4th quadrant are -

- a. $x > 0, y > 0$ b. $x > 0, y < 0$ c. $x < 0, y < 0$ d. None

Qs. 2. Equation of Y axis is

- a. $x=0$ b. $y=0$ c. $x- y = 0$ d. $x+y=0$

Qs.3. The point (8, k) lie on the line $3x-5y=60$, Find the value of k

- a. -36 b. $-36/5$ c. $36/5$ d. None of these

Qs.4. The point (16,-3k) lie on the line $8x-13y=25$, Find the value of k

- a. $-103/39$ b. $-39/103$ c. $25/8$ d. None of these

Qs.5. On solving two linear equations simultaneously, if we get $x=25$ and $y = 0$, then point of intersection of two straight lines is -

- a. (25,25) b. (0,25) c. (0,0) d. (25,0)

Qs.6. The lines $3x-y=20$, $5x+2y=30$ intersect in _____ quadrant

- a. 1st b. 2nd c. 3rd d. 4th

Qs.7. Find roots of $x^2-7x-18=0$

- a. 9,-2 b. 9,2 c. -2,-9 d. Complex/Imaginary

Qs.8. Standard format of a quadratic equation is -

- a. $ax^2+by+c=0$ b. $ax^2+bx+c=0$ c. $ax^2-by-c=0$ d. $ax+by+c=0$

Qs.9. Sum of roots of a quadratic equation is -

- a. $-c/a$ b. c/a c. $-b/a$ d. b/a

Qs. 10. Sum of roots of a cubic equation is -

- a. $-c/a$ b. c/a c. $-b/a$ d. b/a

Qs. 11. Product of roots of a cubic equation $ax^3+bx^2+cx+d=0$ is -

- a. $-d/a$ b. c/a c. $-b/a$ d. b/a

Qs.12. Product of roots of a quadratic equation is -

- a. $-c/a$ b. c/a c. $-b/a$ d. b/a

Qs. 13. Roots of the quadratic equation are equal , then

- a. $b^2-4ac = 0$ b. $a=c$ c. $b=0$ d. None of these

Qs. 14. Roots of the quadratic equation are equal but opposite in sign , then

- a. $b^2-4ac = 0$ b. $a=c$ c. $b=0$ d. None of these

Qs. 15. Roots of the quadratic equation are reciprocals of each other , then

- a. $b^2-4ac = 0$ b. $a=c$ c. $b=0$ d. None of these

Qs. 16. Cubic equation whose roots are 2,5,-8 is

- a. $x^3-4x^2+2=0$ b. $3x^3-4x^2+3x-2=0$ c. $x^3+x^2-46x+80=0$ d. None of these

Qs. 17. Cubic equation whose roots are p,q,r is -

a. $x^3-(p+q+r)x^2+(pq+qr+pr)x-pqr=0$

c. $x^3+(p+q+r)x^2+(pq+qr+pr)x-pqr=0$

b. $x^3+(p+q+r)x^2+(pq+qr+pr)x+pqr=0$

d. None of these

Qs. 18. Cubic equation whose roots are 10,-10,0 is

a. $x^3-100x=0$

b. $x^2-100x=0$

c. $x^3+100x^2+x=0$

d. None of these

Qs. 19. Find the roots of $6x^2-5x-21=0$

a. $-3/2, 7/3$

b. $-3/2, -7/3$

c. $7/3, -2/3$

d. None of the above

Qs. 20. Find the roots of $22x^2-51x-91=0$

a. $-13/2, 11/2$

b. $-3/2, -7/3$

c. $-7/2, -11/13$

d. $-13/11, 7/2$

Answers : DD-28

Qs.	Answer	Qs.	Answer
1	B	11	A
2	A	12	B
3	B	13	A
4	A	14	C
5	D	15	B
6	D	16	C
7	A	17	A
8	B	18	A
9	C	19	A
10	C	20	D

Qs. 1. Find sum of roots of the quadratic equation $3qx^2+35x+1000=0$

- a. $35/3q$ b. $-35/3q$ c. $-3q/35$ d. None

Qs. 2. Standard format of a quadratic equation is -

- a. $ax^2+bx+c=0$ b. $x^2-(\text{sum of roots})x+ \text{product of roots}=0$ c. Both of these d. None

Qs.3. Find quadratic equation whose roots are α, β

- a. $x^2-(\alpha + \beta)x+ \alpha\beta=0$ b. $x^2-(\alpha \beta)x+ \alpha+\beta=0$ c. Both d. None of these

Qs.4. Product of roots of the quadratic equation $8x^2-7x+11k+19=0$ is

- a. $(11k+19)/8$ b. $-(11k+19)/8$ c. $(19k+11)/8$ d. None of these

Qs.5. Find the quadratic equation whose roots are $3/7, -12/5$

- a. $x^2+69x-36=0$ b. $35x^2+69x+36=0$ c. $35x^2+69x-36=0$ d. $35x^2-69x-36=0$

Qs.6. Find the quadratic equation whose one root is $(5+\sqrt{11}), (5-\sqrt{11})$

- a. $x^2-10x-14=0$ b. $x^2-10x+14=0$ c. $x^2+10x+14=0$ d. None

Qs.7. $a^3+b^3 =$

- a. $(a-b)(a^2-ab+b^2)$ b. $(a+b)(a^2-ab-b^2)$ c. $(a+b)(a^2+ab+b^2)$ d. $(a+b)(a^2-ab+b^2)$

Qs.8. $a^3-b^3 =$

- a. $(a-b)(a^2+ab+b^2)$ b. $(a-b)^3+3ab(a-b)$ c. Both d. None

Qs.9. If p, q are the roots of quadratic equation $x^2+3x+7=0$. Find the quadratic equation whose roots are $(p-q)^2, p^2+q^2$

- a. $x^2-24x-95=0$ b. $x^2+24x-95=0$ c. $x^2+24x+95=0$ d. None

Qs. 10. If p, q are the roots of quadratic equation $3x^2-7x+14=0$. Find the value of $(p-q)^2$

- a. $-119/9$ b. $-35/9$ c. $-539/27$ d. None

Qs. 11. If p, q are the roots of quadratic equation $3x^2-7x+14=0$. Find the value of p^2+q^2

- a. $-119/9$ b. $-35/9$ c. $-539/27$ d. None

Qs.12. If p, q are the roots of quadratic equation $3x^2-7x+14=0$. Find the value of p^3+q^3

- a. $-119/9$ b. $-35/9$ c. $-539/27$ d. None

Qs. 13. If p, q are the roots of quadratic equation $3x^2+14x-25=0$. Find the value of p^2+q^2

- a. $496/9$ b. $346/9$ c. $-539/9$ d. None

Qs. 14. If p, q are the roots of quadratic equation $3x^2+14x-25=0$. Find the value of $(p-q)^2$

- a. $496/9$ b. $346/9$ c. $-539/9$ d. None

Qs. 15. Roots of the equation $3x^2-22x+2k-19=0$ are equal. Find the value of k .

- a. $19/24$ b. $-712/24$ c. $24/712$ d. $712/24$

Qs. 16. Roots of the equation $3kx^2-2x^2+19x-3k+63=0$ are reciprocals of each other. Find the value of k .

- a. $7/13$ b. $65/6$ c. $63/3$ d. None

Qs. 17. Roots of the equation $3x^2 - 2kx + 21x - 35 = 0$ are equal but opposite in sign. Find the value of k.

- a. $21/2$ b. $35/3$ c. $2/21$ d. None

Qs. 18. Roots of the equation $5kx^2 - 22x^2 + 35kx - 21x + 2p - 27 = 0$ are equal but opposite in sign. Find the value of k.

- a. $3/2$ b. $5/3$ c. $3/5$ d. None

Qs. 19. If x = No. of units to be produced and y = Total Cost, Total Fixed cost is ₹ 3,80,000 and Variable cost per unit is ₹ 20, then

- a. $y = 3,80,000 + 20x$ b. $y = 3,80,000 \times 20x$ c. $y = 3,80,000 - 20x$ d. None

Qs. 20. If p, q are the roots of $x^2 + 2x + 1 = 0$, then quadratic equation whose roots are $1/p, 1/q$ is

- a. $x^2 - 2x - 1 = 0$ b. $x^2 + 2x + 1 = 0$ c. $x^2 - 2x + 1 = 0$ d. None

Answers : DD-29

Qs.	Answer	Qs.	Answer
1	B	11	B
2	C	12	C
3	A	13	B
4	A	14	A
5	C	15	D
6	B	16	B
7	D	17	A
8	C	18	C
9	C	19	A
10	A	20	B

Qs. 1. What are the reasons for payment of interest -

- a. Time value of Money
 b. Inflation & Opportunity Cost
 c. Risk Factor, Liquidity Preference
 d. All of these

Qs. 2. Find amount receivable after 42 months if ₹ 10,000 invested @14.50%p.a.s.i

- a. ₹ 15,075 b. ₹ 5,075 c. ₹ 25,075 d. None

Qs.3. Find "P" when amount = ₹ 25,000; $r = 12.50\%$ p.a.s.i; $n = 3.50$ years.

- a. ₹ 17,391 b. ₹ 42,391 c. ₹ 6,609 d. None of these

Qs.4. Find amount receivable after 8 years and 8 months if ₹ 75,000 invested @12.50%p.a.s.i

- a. ₹ 1,65,250 b. ₹ 1,56,250 c. ₹ 1,96,250 d. None of these

Qs.5. Find amount receivable after 6 years, if ₹ 10,000 invested @13.50%p.a.c.i.

- a. ₹ 16,258 b. ₹ 21,378 c. ₹ 11,378 d. None of these

Qs.6. An amount invested at S.I. becomes double in 20 years. How many years it will take to become four times of original sum invested.

- a. 30 years b. 60 years c. 40 years d. 80 years

Qs.7. An amount invested at C.I. becomes double in 15 years. How many years it will take to become eight times of original sum invested.

- a. 30 years b. 90 years c. 45 years d. 120 years

Qs.8. Amount = ₹ 80,000; $P = ₹ 60,000$; $n = 6$ years, then $r = \underline{\hspace{2cm}}$ % p.a.c.i

- a. 4.9117% b. 9.4117 c. 7.9114 d. None

Qs.9. ₹ 10,000 invested in a bank for 3 years. Find Amount receivable after 3 years if rate of interest is 15%p.a.c.semi-annually.

- a. ₹ 13,455 b. ₹ 14,533 c. ₹ 51,433 d. ₹ 15,433

Qs. 10. Find present value of ₹ 80,000 receivable after 8 years, if money is 10% effective.

- a. ₹ 73,321 b. ₹ 37,321 c. ₹ 27,731 d. None

Qs. 11. Discounting factor = ?

- a. $1/(1+r)^n$ b. $r/(1+P)^n$ c. $1/(1+n)^r$ d. None

Qs.12. ₹ 1,000 invested for one year @ 12%p.a.c.q. Find amount receivable after one year

- a. ₹ 1162 b. ₹ 1621 c. ₹ 1126 d. None

Qs. 13. Find effective rate of interest corresponding to nominal rate of interest of 12%p.a.c.q.

- a. 12.55% b. 15.22% c. 11.95% d. 12%

Qs. 14. Find effective rate of interest corresponding to nominal rate of interest of 18%p.a.c.half yearly.

- a. 19.55% b. 18.81% c. 17.95% d. 18%

Qs. 15. Find effective rate of interest corresponding to nominal rate of interest of 26%p.a.c.weekly.

- a. 29.60% b. 25.22% c. 26.95% d. 26%

- Qs. 16. An effective rate of interest of 19.708% p.a.c.a. is equivalent to _____% p.a.c.q.
a. 19% b. 18% c. 18.40% d. None
- Qs. 17. An effective rate of interest of 26.824% p.a.c.a. is equivalent to _____% p.a.c.monthly.
a. 26% b. 24% c. 25% d. None
- Qs. 18. Amount = ₹ 85,500; P = ₹ 20,000; n = 10 years, r = _____% p.a.c.semi-annually
a. 15.70% b. 17.50% c. 15.07% d. None
- Qs. 19. Amount = ₹ 1,00,000; P = ₹ 40,000; n = 33 months, r = _____% p.a.c.quarterly
a. 29.7250% b. 30.7500% c. 39.2590% d. 34.7586%
- Qs. 20. A sinking fund of ₹ 20,00,000 is to be created at the end of 8 years. Find how much amount should be kept aside at the end of every year, if money is 13% effective.
a. ₹ 1,56,773 b. ₹ 1,30,773 c. ₹ 1,50,000 d. None

Answers : DD-30

Qs.	Answer	Qs.	Answer
1	D	11	A
2	A	12	C
3	A	13	A
4	B	14	B
5	B	15	A
6	B	16	C
7	C	17	B
8	A	18	C
9	D	19	D
10	B	20	A

- Qs. 1. What sum of money will produce 28,600 interest in 3 years and 3 months @ 2.5%p.a.S.I.
 a. 5,32,000 b. 3,52,000 c. 2,35,000 d. None of these
- Qs. 2. In what time will ₹85,000 amount to ₹1,57,675 @ 4.5% p.a.S.I.
 a. 15 years b. 18 years c. 19 years d. None
- Qs.3. What sum will amount to ₹2,000 in 3 years @ 6%p.a.C.I
 a. ₹1,791 b. ₹1,679.24 c. ₹2,609.42 d. None of these
- Qs.4. Difference between S.I & C.I on a certain sum of money for 4 years @6%p.a. is ₹168.57, what is that sum.
 a. ₹7,500 b. ₹7,850 c. ₹7,250 d. None of these
- Qs.5. A sum of money doubles itself at C.I in 5 years, in how many years it will become 32 times.
 a. 28 years b. 160 years c. 25 years d. None of these
- Qs.6. A person purchased computer by paying ₹20,000 cash down and 25 equal annual installments of ₹4,000. Find cash down price of computer, if money is 5% effective.
 a. ₹73,376 b. ₹76,376 c. ₹56,376 d. None of these
- Qs.7. 2,-4,6,-8,10,-12 are in A.P.
 a. True b. False c. Can't Say d. Partly True
- Qs.8. $7x+2$, $11x-3$, $5x+10$ are in A.P. Find the value of x .
 a. 2.50 b. 8.10 c. 1.80 d. None
- Qs.9. $3x+7$, $8x-2$, $13x+10$ are in A.P. Find the value of x .
 a. -9 b. 12 c. -9 or 12 d. Wrong data
- Qs. 10. 24,28,32,.....,4444. Find how many terms are there in this A.P.
 a. 1160 b. 1106 c. 6011 d. None
- Qs. 11. 115,120,125,.....,5565. Find how many terms are there in this A.P.
 a. 1109 b. 1901 c. 1091 d. None
- Qs.12. 200,196,192,.....,-88. Find how many terms are there in this A.P.
 a. 73 b. 37 c. 88 d. None
- Qs. 13. $1+2+3+4+ \dots n$ terms = ?
 a. $n(n+1)/2$ b. $n(n+1)(2n+1)/6$ c. n^2 d. $[n(n+1)/2]^2$
- Qs. 14. $1+3+5+7+ \dots n$ terms = ?
 a. $n(n+1)/2$ b. $n(n+1)(2n+1)/6$ c. n^2 d. $[n(n+1)/2]^2$
- Qs. 15. $1^2+2^2+3^2+4^2+ \dots n$ terms = ?
 a. $n(n+1)/2$ b. $n(n+1)(2n+1)/6$ c. n^2 d. $[n(n+1)/2]^2$
- Qs. 16. $1^3+2^3+3^3+4^3+ \dots n$ terms = ?
 a. $n(n+1)/2$ b. $n(n+1)(2n+1)/6$ c. n^2 d. $[n(n+1)/2]^2$
- Qs. 17. $2+4+6+8+ \dots n$ terms = ?
 a. $n(n+1)/2$ b. $n(n+1)(2n+1)/6$ c. n^2 d. $n(n+1)$

Qs. 18. $18^2+19^2+20^2+21^2+\dots+70^2=?$

a. 151010

b. 115010

c. 155010

d. None

Qs. 19. $21^3+22^3+23^3+24^3+\dots+32^3=?$

a. 234684

b. 324864

c. 284384

d. None

Qs. 20. $1+3+5+7+\dots+511=?$

a. 261121

b. 65536

c. 56357

d. None

Answers : DD-31

Qs.	Answer	Qs.	Answer
1	B	11	C
2	C	12	A
3	B	13	A
4	A	14	C
5	C	15	B
6	B	16	D
7	B	17	D
8	C	18	B
9	D	19	A
10	B	20	B

Qs. 1. 55,61,67,73, Find t_{103}

- a. 667 b. 1249 c. 259 d. None of these

Qs. 2. 55,61,67,73, Find t_{200}

- a. 667 b. 1249 c. 259 d. None of these

Qs.3. 55,61,67,73, Find t_{35}

- a. 667 b. 1249 c. 259 d. None of these

Qs.4. $57+58+59+ \dots +500 = ?$

- a. 123654 b. 132650 c. 125634 d. None of these

Qs.5. 201,198,195,192 Find t_{50}

- a. 54 b. -405 c. 69 d. 65

Qs.6. 201,198,195,192 Find t_{203}

- a. 54 b. -405 c. 69 d. 65

Qs.7. Sum of first n terms of A.P. is

- a. $n/2 [2a+(n-1) d]$ b. $n/2 (a+t_n)$ c. Both d. None

Qs.8. $81+86+91+96+ \dots$ Find sum of first 50 terms

- a. 20175 b. 10175 c. 10715 d. None

Qs.9. $215+220+225+230+ \dots +350 = ?$

- a. 7910 b. 350 c. 28 d. None

Qs. 10. $79+83+87+91+ \dots$ Find s_{20}

- a. 19359 b. 2340 c. 19179 d. None

Qs. 11. $79+83+87+91+ \dots$ Find s_{81}

- a. 19359 b. 2340 c. 19179 d. None

Qs.12. If S_n for A.P. is $. 5n^2+7n$. Find t_{25}

- a. 252 b. 237 c. 288 d. None

Qs. 13. t_n for A.P. is $2n+8$. Find S_n

- a. $n+9n$ b. n^2+9n c. $n+9$ d. $(n+9)^2$

Qs. 14. t_n for A.P. is $5n-63$. Find S_n

- a. $(5n^2+9n)/2$ b. $5n^2-121n$ c. $(5n^2-121n)/2$ d. $(5n+121)^2$

Qs. 15. If S_n for A.P. is $. 7n^2-3n$. Find t_n

- a. $14n-10$ b. $10n-14$ c. $14n+10$ d. None

Qs. 16. $-22,-20,-18, \dots, 1292$ Find sum of all terms of A.P.

- a. 478130 b. 417830 c. 413780 d. None

Qs. 17. Find A.M. of 65 & 77

- a. 70 b. 71 c. 72 d. 73

Qs. 18. Arithmetic Mean of x,y is

a. $(x+y)/2$

b. $\pm \sqrt{xy}$

c. $2xy/(x+y)$

d. None

Qs. 19. Harmonic Mean of x,y is

a. $(x+y)/2$

b. $\pm \sqrt{xy}$

c. $2xy/(x+y)$

d. None

Qs. 20. Geometric Mean of x,y is

a. $(x+y)/2$

b. $\pm \sqrt{xy}$

c. $2xy/(x+y)$

d. None

Answers : DD-32

Qs.	Answer	Qs.	Answer
1	A	11	A
2	B	12	A
3	C	13	B
4	A	14	C
5	A	15	A
6	B	16	B
7	C	17	B
8	B	18	A
9	A	19	C
10	B	20	B

Qs. 1. If a,b,c,d,e are in A.P. then

- a. a,c,e are in A.P. b. b,c,d are in A.P c. $e-d = b-a$ d. All of these

Qs. 2. Two Arithmetic Means between -20 & 540 are

- a. 166,353 b. -100,270 c. 153.50,353.50 d. 166.66666, 353.3333

Qs.3. 7 Arithmetic Means between -20, 220 are

- a. 10,40,80,100,130,170,190 b. 10,40,70,100,130,160,190
c. 190,160,100,70,40,10,-10 d. None of these

Qs.4. For A.P. if t_5 is 87, t_8 is 118. Find S_{100}

- a. 52516.66666 b. 57516.33333 c. 55716.66666 d. None of these

Qs.5. For A.P. t_8 is 100, t_{13} is -215. Find t_{50} , S_{10}

- a. -2546,2575 b. -2575,2546 c. 2575,2546 d. None of these

Qs.6. If sum of first 25 terms of A.P. = sum of first 30 terms of A.P. the sum of first 55 terms is

- a. 0 b. -1 c. 55 d. 5

Qs.7. Which of the following is correct for A.P.

- a. If $S_m = S_n$, then $S_{m+n} = 0$ b. If $t_m = n$ & $t_n = m$, then $t_{m+n} = 0$
c. If $m \times t_m = n \times t_n$, then $t_{m+n} = 0$ d. All of these

Qs.8. t_n for G.P. is

- a. $a+(n-1)d$ b. $2a+(n-1)d$ c. $axr^{(n-1)}$ d. None

Qs.9. $8+16+32+\dots\dots\dots$ 10 terms = ?

- a. 8184 b. 8481 c. 8841 d. None

Qs. 10. $100+50+25+12.50 \dots\dots$ Find S_{33}

- a. 250 b. 240 c. 200 d. None

Qs. 11. Sum of n terms of G.P. when $r > 1$ is

- a. $a(r^n - 1)/(r - 1)$ b. $a(1 - r^n)/(1 - r)$ c. $a/(1 - r)$ d. None

Qs.12. Sum of n terms of G.P. when $r < 1$ is

- a. $a(r^n - 1)/(r - 1)$ b. $a(1 - r^n)/(1 - r)$ c. $a/(1 - r)$ d. None

Qs. 13. Sum of Infinite terms of G.P. when $r < 1$ is

- a. $a(r^n - 1)/(r - 1)$ b. $a(1 - r^n)/(1 - r)$ c. $a/(1 - r)$ d. None

Qs. 14. Number of terms of the series $10+9.666666+9.333333+9+8.666666+\dots\dots\dots$ will amount to 155

- a. 30 b. 31 c. a or b d. None of these

Qs. 15. If x,y,z are in H.P. then $1/x, 1/y, 1/z$ are in

- a. A.P. b. G.P. c. H.P. d. None

Qs. 16. For two positive observations G.M. is _____ of A.M. and H.M.

- a. A.M. b. G.M. c. H.M. d. None

Qs. 17. Harmonic Mean is used to calculate average speed of the journey.

- a. True b. False c. Can't Say d. None

Qs. 18. Find AM, GM, HM of 50,90

- a. 75,68.70,62.49 b. 72,76,64.29 c. 70,69.24,64.29 d. 70,67.08,64.29

Qs. 19. For G.P. t_5 is 64, t_6 is 128. Find t_1 .

- a. 4 b. 8 c. 32 d. None

Qs. 20. For two observations if GM is 25 and AM is 70, find HM.

- a. 9.82857 b. 8.92857 c. 7.892825 d. None

Answers : DD-33

Qs.	Answer	Qs.	Answer
1	D	11	A
2	D	12	B
3	B	13	C
4	C	14	C
5	A	15	A
6	A	16	B
7	D	17	A
8	C	18	D
9	A	19	A
10	C	20	B

Qs. 1. $5+25+125+\dots$ Find S_{11}

- a. 6,30,35,155 b. 1,60,35,155 c. 6,10,35,155 d. All of these

Qs. 2. Find the sum of all 3 digit natural numbers divisible by 7.

- a. 70336 b. 30776 c. 73306 d. None of these

Qs.3. Find the sum of all 4 digit natural numbers divisible by 5.

- a. 78,95,300 b. 98,95,500 c. 98,75,000 d. None of these

Qs.4. Find sum of all numbers of 3 digits such that on division by 16 that number leaves remainder of 7

- a. 31407 b. 41307 c. 34107 d. None of these

Qs.5. Find the sum of all odd natural numbers of 2 digits.

- a. 4275 b. 2745 c. 2475 d. None of these

Qs.6. Find the sum of all natural numbers divisible by 7 between 4000 & 15000

- a. 19422929 b. 14922929 c. 15522929 d. None

Qs.7. $8+88+888+8888+\dots$ Find sum of 7 terms

- a. 8888888 b. 9876536 c. 8888888888 d. 98765360

Qs.8. $7+77+777+7777+\dots$ Find sum of n terms

- a. $\frac{7}{9}[10(10^n-1)/9 - n]$ b. $7 [10(10^n-1)/9 - n]$ c. $\frac{7}{9}[10(10^n-1)/9]$ d. None

Qs.9. First term of the ratio is known as _____

- a. Antecedent b. Consequent c. Divisor d. Quotient

Qs. 10. Second term of the ratio is known as _____

- a. Antecedent b. Consequent c. Divisor d. Quotient

Qs. 11. Simplest form of the ratio 700:500 is

- a. 70:50 b. 35:25 c. 17.50:12.50 d. None

Qs.12. Generally ratio is expressed in _____ form

- a. Simplest b. Complicated c. Historical d. Critical

Qs. 13. Simplest form of the ratio 2.50:4.50 is

- a. 25:45 b. 250:450 c. 5:9 d. None

Qs. 14. Ratio of 10 hours, 66 minutes is

- a. 100:11 b. 1:100 c. 10:66 d. 5:33

Qs. 15. Ratio of (3 hours, 10 minutes) & (8 hours, 30 minutes) is

- a. 51:19 b. 19:51 c. 3.10:8.10 d. None

Qs. 16. Ratio of 4 GB & 1024 MB is

- a. 1:1 b. 1:4 c. 4:1 d. None

Qs. 17. Ratio of 12 inches, 5 feet is .

- a. 60:66 b. 12:5 c. 5:12 d. 1:5

Qs. 18. Duplicate ratio of sub-duplicate ratio of 5:7 is

- a. 10:14 b. 25:49 c. 49:25 d. 125:343

Qs. 19. If antecedent $>$ Consequent then it is said to be

- a. Ratio of greater inequality b. Ratio of lesser inequality
c. Ratio of equality d. None of these

Qs. 20. If Antecedent $<$ Consequent then it is said to be

- a. Ratio of greater inequality b. Ratio of lesser inequality
c. Ratio of equality d. None of these

Qs. 21. If Antecedent = Consequent then it is said to be

- a. Ratio of greater inequality b. Ratio of lesser inequality
c. Ratio of equality d. None of these

Answers : DD-34

Qs.	Answer	Qs.	Answer
1	C	11	D
2	A	12	A
3	B	13	C
4	A	14	A
5	C	15	B
6	B	16	C
7	B	17	D
8	A	18	A
9	A	19	A
10	B	20	B
		21	C

Qs. 1. The duplicate ratio of 9 : 3 is :

- a. $3 : \sqrt{3}$ b. 81 : 9 c. 3 : 9 d. None of these

Qs. 2. The sub duplicate ratio of 144 : 169 is

- a. 13 : 12 b. 169 : 144 c. 288 : 338 d. None of these

Qs. 3. The triplicate ratio of 7 : 8 is :

- a. 343 : 512 b. 8 : 7 c. 21 : 24 d. None of these

Qs. 4. The sub triplicate ratio of 27 : 64 is

- a. $3 : 64/3$ b. 9 : 16 c. 3 : 4 d. None of these

Qs. 5. Find in what ratio will the total wages of the workers of a factory be increased or decreased if there be a reduction in the number of workers in the ratio 17 : 12 and an increment in their wages in the ratio 24 : 29.

- a. The ratio in which the total wages increase is 24 : 29
b. The ratio in which the total wages decrease is 34 : 29
c. The ratio in which the total wages increase is 29 : 34
d. The ratio in which the total wages decrease is 17 : 12

Qs. 6. The fourth proportional to 3, 8, 12 is

- a. $5/7$ b. $7/5$ c. 32 d. 53

Qs. 7. Mean proportional between 9 and 25 is :

- a. 13 b. 12 c. 14 d. 15

Qs. 8. What least number must be added to each one of 6, 14, 18 and 38 to make them in proportion?

- a. 5 b. 3 c. 2 d. 4

Qs. 9. A man 1.4 m tall casts a shadow 1.2 m long at the time when a building, casts a shadow 5.4 m long. Calculate the height of the building :

- a. 6.3 m b. 3.21 m c. 4.3 m d. 5.6 m

Qs. 10. The incomes of X and Y are in the ratio 3 : 2 and their expenditures in the ratio 5 : 3. If each saves ₹ 1,500 then income of X and Y respectively is :

- a. ₹ 6,000 and ₹ 9,000 b. ₹ 4,500 and ₹ 6,000
c. ₹ 13,500 and ₹ 9,000 d. ₹ 9,000 and ₹ 6,000

Qs. 11. The prices of a washing machine and a refrigerator are in the ratio 9 : 5. If a washing machine costs ₹ 6,800 more than a refrigerator, the price of a washing machine is :

- a. ₹ 16,000 b. ₹ 16,300 c. ₹ 15,300 d. None of these

Qs. 12. If Raja can walk a certain distance in 50 days when he rest 9 hours each day,. How long will it take him to walk twice as far if he walk twice as fast and rest twice as long each day?

- a. 125 days b. 25 days c. 50 days d. 100 days

Qs. 13. Two whole numbers whose sum is 100 cannot be in the ratio :

- a. 3 : 7 b. 4 : 1 c. 3 : 4 d. 16 : 9

Qs. 14. The duplicate ratio of 2:5 is

- a. 4:125 b. 8:25 c. 8:50 d. None of these

Qs. 15. Sub-duplicate ratio of 81:625 is

- a. 9:225 b. 3:25 c. 25:3 d. None of these

Qs. 16. $\log 2^x$ is equal to

- a. $x \cdot \log 2$ b. $x / \log 2$ c. Both of these d. None of these

Qs. 17. Ratio compounded of a ratio and its sub-duplicate ratio is

- a. Triplicate ratio b. Sub-Triplicate ratio c. Sub-Duplicate ratio d. None of these

Qs. 18. 3,x,27,y are in continued proportion Find the value of x

- a. 3 b. 9 c. Can't say d. None of these

Qs. 19. Find future value of Rs.3000 after 9 years (12% p.a.)

- a. 8319.24 b. 8320.56 c. 3820.98 d. None of these

Qs. 20. Find present value of Annuity due of ₹ 3500 for 10 years at the rate of 12% p.a.

- a. ₹ 35,000 b. ₹ 38,000 c. ₹ 68,791 d. None of these

Answers : DD-35

Qs.	Answer	Qs.	Answer
1	B	11	C
2	D	12	A
3	A	13	C
4	C	14	C
5	B	15	D
6	C	16	A
7	D	17	D
8	C	18	B
9	A	19	A
10	D	20	D

Qs. 1. The vessels contain water and milk in the ratio of 1:2 and 2:5 are mixed in the ratio 1:4, the resulting mixture will have water and milk in the ratio.

- a. 31:74 b. 31:75 c. 30:77 d. None of these

Qs. 2. An amount of Rs.950 is distributed among A,B,C in the ratio of 5:11:13, what is the difference between the share of B and A

- a. 300 b. 340 c. 500 d. None of these

Qs. 3. In a party of 40 people, each shakes hand with others. How many hand shakes took place in a party?

- a. 870 b. 780 c. 890 d. None of these

Qs. 4. The 6th term from end of G.P. 8,4,2,1,....., $1/1024$ is

- a. $1/64$ b. 32 c. $1/32$ d. None of these

Qs. 5. The number of times a particular item occurs in data is called as

- a. Variation b. Cumulative frequency c. Frequency d. Probability

Qs. 6. If mean of 100 observations is k. if m is added to all the observations mean becomes k+9 then the value of m is

- a. -9 b. 9 c. 81 d. None of these

Qs. 7. Which of the following is the Best measure of dispersion

- a. Mean b. Median c. Mode d. None of these

Qs. 8. 5th Decile = Quartile

- a. First b. Second c. Third d. Fourth

Qs. 9. 10th percentile = Quartile

- a. First b. Second c. Third d. None of these

Qs. 10. A Batsman in his 17th inning makes a score of 85 and thereby increases his average by 3. What is average after 17th innings?

- a. 37 b. 35 c. 36 d. None of these

Qs. 11. A person divides his journey 3 equal parts and decides to travel on 3 parts at the speeds of 40,30,15 km/hr respectively. Find the average speed of whole journey.

- a. 30 km/hr b. 24 km/hr c. 35 km/hr d. None of these

Qs. 12. Correlation coefficient is not unit free

- a. True b. False c. Can't say d. None of these

Qs. 13. Which is further not amenable for algebraic treatment

- a. Arithmetic Mean b. Median c. Mode d. Both (b) and (c)

Qs. 14. If $r = 0$ then

- a. There is a perfect correlation between x and y
b. X and y are close relatives of each other
c. There is negative correlation between x and y
d. X and y are not correlated

Qs. 15. When cost of living increases, the standard of living improves, This is

- a. True b. False c. Either of these d. None of these

Qs. 16. If average of 2 numbers is 20 and their standard deviation is 5. These numbers are

- a. 15,25 b. 30,10 c. 20,20 d. None of these

Qs. 17. Range of the numbers 20 and 100 is

- a. 40 b. 60 c. 120 d. 80

Qs. 18. Find the rank of median in 23,46,78

- a. 46 b. 1.5 c. 2 d. None of these

Qs. 19. If $2x+3y=90$ and range of y is 48 then range of x is

- a. 1 b. 2 c. 3 d. None of these

Qs. 20. Find the correlation coefficient between the following set of observations

X: 102 109

Y: 50 48

- a. 1 b. -1 c. 0 d. None of these

Answers : DD-36

Qs.	Answer	Qs.	Answer
1	A	11	B
2	D	12	B
3	B	13	D
4	C	14	D
5	C	15	B
6	B	16	A
7	D	17	D
8	B	18	C
9	D	19	D
10	A	20	B

Qs. 1. Ratio compounded with that ratio is its

- a. Sub-duplicate ratio b. Duplicate ratio c. Inverse ratio d. None of these

Qs. 2. In case of 2 observations AM=10 GM=8 then HM=?

- a. 6.4 b. 6 c. 4.24 d. None of these

Qs. 3. An automobile driver travels to a hill station at an average speed of 30 km/hr. He makes return trip at an average speed of 20 km/hr. What is the average speed of the entire distance(200km)

- a. 30 b. 20 c. 25 d. 24

Qs. 4. Team A : SD=2.00 and AM=20

Team B : SD=1.80 and AM=25. The statement – ‘Team A shows more variation.’ is

- a. True b. False c. Can't say d. Insufficient data

Qs. 5. The mean age of combined group of men and women is 25 years, if mean age of man is 26 and that of women is 21, then % of men and women in the group is

- a. 80%, 20% b. 20%, 80% c. 50%, 50% d. None of these

Qs. 6. Simplest form of the ratio 3.50:7.50 is

- a. 35:75 b. 7:25 c. 15:7 d. 7:15

Qs. 7. The HM of 6,14,21 & 30 is

- a. 17.75 b. 12.54 c. 17.50 d. None of these

Qs. 8. AM of 1,2,3,4 n is

- a. n b. $n(n+1)$ c. $(n+1)/2$ d. None of these

Qs. 9. For the set of observations 30,69,45,80,89,79,75,90 the value of P_{62} is

- a. 79 b. 79.50 c. 80 d. 79.58

Qs. 10. In case of 2 observations GM is GM of AM and HM

- a. True b. False c. Can't say d. May be true

Qs. 11. Duplicate ratio of 3:5 is

- a. 9:125 b. 18:50 c. 27:125 d. None of these

Qs. 12. Triplicate ratio of 27:343 is

- a. 3:7 b. $27^2:343^2$ c. 13:34 d. None of these

Qs. 13. a,b,c,d are in proportion if $ab=cd$

- a. True b. False c. Can't say d. None of these

Qs. 14. Which term of AP 5,13,21..... s 181

- a. 21st b. 22nd c. 23rd d. 24th

Qs. 15. If the denominator of the fraction exceed the numerator by 4. If numerator and denominator are both increased by 3 then the new fraction becomes $\frac{4}{5}$, Find the original fraction

- a. $\frac{14}{17}$ b. $\frac{13}{17}$ c. $\frac{12}{15}$ d. $\frac{11}{15}$

Qs. 16. The cost of 7 kg sugar and 5 kg rice is ` 234, and the cost of 6 kg sugar and 7 kg of rice is ` 263. Find the cost of sugar and rice per kg.

- a. ₹ 17, ₹ 23.80 b. ₹ 17.50, ₹ 23.50 c. ₹ 18, ₹ 24 d. None of these

Qs. 17. ₹ 600 were divided equally among a certain number of poor children. Had there been 5 less children, each would have got Rs.4 more. Find the original number of children

- a. 28 b. 30 c. 32 d. 24

Qs. 18. If one root of the equation $ax^2+bx+c=0$ is reciprocal of other then

- a. $a=b$ b. $a=c$ c. $b=c$ d. $a=-c$

Qs. 19. ₹ 630 were distributed among A, B,C so that the shares of A and B were as 2:3 and shares of B and C were 4:5, What is the share of C.

- a. ₹ 270 b. ₹ 144 c. ₹ 216 d. None of these

Qs. 20. The population of the village was 20,000 and after 2 years it becomes 22,050, what is the rate of increase p.a.

- a. 10% b. 8% c. 5% d. 6%

Answers : DD-37

Qs.	Answer	Qs.	Answer
1	B	11	B
2	A	12	D
3	D	13	B
4	A	14	C
5	A	15	B
6	D	16	D
7	B	17	B
8	C	18	B
9	D	19	A
10	A	20	C

Qs. 1. If $\log_{3/2}x=3$, Find the value of x

- a. $9/4$ b. $8/27$ c. $27/8$ d. None of these

Qs. 2. $\log_{1/9}243 = x$, Find X

- a. $9/4$ b. $8/27$ c. $27/8$ d. None of these

Qs. 3. $\log_3x^3-2\log_3x-2=0$ Find x

- a. 9 b. 2 c. 3 d. None of these

Qs. 4. If $\log_2x + \log_4x + \log_{16}x = 21/4$; Then x=?

- a. 10 b. 9 c. 8 d. 7

Qs. 5. If $\log_a3=2$, $\log_b8=3$ then $\log_{ba}=?$

- a. \log_32 b. \log_23 c. \log_34 d. \log_43

Qs. 6. Find x if $\log_x10 + \log_x100 + \log_x1000 = 6$

- a. 10 b. 2 c. 4 d. 6

Qs. 7. If $2\log_a + 3\log_b - 2 = 0$ then $a^2b^3 = ?$

- a. 10^4 b. 10 c. 10^2 d. 10^3

Qs. 8. $\log_2[\log_2\{\log_3(\log_327^3)\}] = ?$

- a. $\frac{1}{2}$ b. 1 c. 0 d. 2

Qs. 9. If \log_a, \log_b, \log_c are in A.P. then

- a. a, b, c are in G.P. b. a^2, b^2, c^2 are in G.P.
c. a, b, c are in A.P. d. a, b, c are in H.P.

Qs. 10. A ratio is expressed in ----- form.

- a. Simplest b. Complicated c. Moderate d. None

Qs. 11. If $2\log x = 4 \log 4$, then x is equal to

- a. 16 b. 4 c. 2 d. None

Qs. 12. If $x:y = 5:4$ the value of $x^2y : xy^2$ is

- a. 13:12 b. 12:13 c. 21:31 d. None of these

Qs. 13. Inverse ratio of 1.2 : 3.6 is

- a. 1:1 b. 2:3 c. 3:2 d. None of these

Qs. 14. The denominator of a fraction exceeds the numerator by 2. if 5 is added to numerator the fraction increases by unity. The fraction is

- a. $5/7$ b. $1/3$ c. $7/9$ d. $3/5$

Qs. 15. the age of the person is twice the sum of ages of their two sons and five years ago his age was three times of sum of ages of his sons, his present age is

- a. 60 years b. 52 years c. 51 years d. 50 years

Qs. 16. The sum of two numbers is 45 and the mean proportional between them is 18. The numbers are

- a. 15,30 b. 32,13 c. 36,9 d. 25,20

Qs.17. Duplicate ratio of 2 : 4 is

- a. 1:4 b. 1:16 c. 4:166 d. None of these

Qs. 18. The ratio compounded of 2:3 and 4:5 is

- a. 8:15.5 b. 8:15 c. 15:8 d. 12:16

Qs. 19. The number which is subtracted from each of the terms of the ratio 19:31 reducing it to 1:4 is

- a. 15 b. 5 c. 1 d. None of above

Qs. 20. The ratio of 2 kgs. and 5 gms is

- a. 1:4000 b. 2:5000 c. 2000:1 d. None of these

Answers : DD-38

Qs.	Answer	Qs.	Answer
1	C	11	A
2	D	12	D
3	A	13	D
4	C	14	D
5	D	15	D
6	A	16	C
7	C	17	A
8	C	18	B
9	A	19	A
10	A	20	D

Qs. 1. The sub triplicate ratio of triplicate of 2:3 is

- a. 4:6 b. 4:12 c. 8:27 d. 2:3:3

Qs. 2. The ratio between speeds of two trains is 20:22 if first train is running at a speed of 440 km/hr then speed of second train is

- a. 484 Km/hr b. 848 Km/hr c. 400 km/hr d. None of above

Qs. 3. The angles of a triangle are in the ratio of 2:3:13 then the angles are

- a. (20,30,140) b. (20,30,130) c. (20,20,140) d. None of above

Qs. 4. The sub - duplicate ratio of 1: 4 is

- a. 1:166 b. 1:2 c. 2:6 d. 12:8

Qs. 5. First term of the ratio is called as

- a. Antecedent b. Consequent c. Antecedent and consequent d. None of these

Qs. 6. If $a:b = c:d$ then $a:c = b:d$ this property is known as

- a. Alternendo b. Componendo c. Dividendo d. None of these

Qs. 7. 4, xx, 9, 13.5 are in proportion then xx is

- a. 6 b. 8 c. 9 d. None of these

Qs. 8. Two numbers are in ratio 3:4, If 6 is added to each of the term then the new ratio will be 4:5 then the numbers are

- a. 14,20 b. 17,19 c. 18,24 d. None of these

Qs. 9. The mean proportional between 5 and 120 is

- a. 24.90 b. 24.89 c. 24.49 d. None of these

Qs. 10. Find Inverse ratio of 2.2 ; 2.22

- a. 2.22: 2.222 b. 1.11: 1.1 c. 1.111 : 1.1111 d. None of these

Qs. 11. The ratio of two quantities is 5:9. If the antecedent is 25, the consequent is

- a. 9 b. 45 c. 40 d. None of these.

Qs. 12. The sub – duplicate ratio of 1250 : 50 is

- a. 12:16 b. 1: 5 c. 5:1 d. None of these

Qs.13. If $a : b = c : d$ then $(a + b) / a = (c + d) / c$ is called as

- a. Alternendo b. Componendo c. Dividendo d. None of these

Qs. 14. Ratio can be expressed without unit - this sentence is

- a. Correct b. Incorrect c. Can't Say d. None of these

Qs. 15. 9 : 8 is a

- a. A Greater Inequality b. Less Inequality c. Ratio of equality d. None of these

Qs. 16. $\log (3 \times 5 \times 7)$ is equal to

- a. $\log 3 \times \log 5 \times \log 7$ b. $\log 3 + \log 5 + \log 7$ c. $\log 3 - \log 5 - \log 7$ d. 0

Qs. 17. A man has only 20 paise coins and 25 paise coins in his purse. If he has 50 coins in all totaling Rs. 11.25, how many coins of each does he have

- a. 15, 35 b. 25, 25 c. 40, 10 d. 30, 20

Qs. 18. Good measure of central tendency should be

- a. Capable of further algebraic treatment b. Based on all observations
c. Rigidly defined d. All of these

Qs. 19. In case of grouped data when the last class interval is '80 and above' the best average is

- a. Mean b. Median c. Mode d. None of these

Qs. 20. Percentiles and deciles divides the given set of observations in to

- a. 100 & 10 equal parts b. 10 & 100 equal parts
c. 100 & 10 parts d. 100 & 10 parts

Answers : DD-39

Qs.	Answer	Qs.	Answer
1	A	11	B
2	A	12	C
3	B	13	D
4	B	14	A
5	A	15	A
6	A	16	B
7	A	17	B
8	C	18	D
9	C	19	B
10	B	20	A

Qs. 1. Among AM,GM and HM the largest value is of

- a. AM b. GM c. HM d. None of these

Qs. 2. The value of Q_2 is same as

- a. Mean b. Median c. D_5 d. Both (B) and (C)

Qs. 3. There are 60 women, 40 men and 50 children in a factory. The average number of units produced by women is 70, that by men is 80 and the average by children is 50. Find combined AM.

- a. 66.67 b. 66 c. 50 d. None of these

Qs. 4. AM = 10, GM = 8 therefore 2 observations are

- a. 32 & 2 b. 18 & 2 c. 16 & 4 d. None of these

Qs. 5. Range is based on

- a. Any 2 observations b. Highest and lowest values
c. All the observations d. None of them

Qs. 6. The sum of upper and lower quartile is found to be 160 and their difference is 80. The value of coefficient of quartile deviation is

- a. 50 b. 55 c. 10 d. 0.20

Qs. 7. Coefficient of quartile deviation for certain data is 0.20. The sum of two quartiles is 100. the value of two quartiles are

- a. 50,50 b. 60,40 c. 70,30 d. 10,90

Qs. 8. The coefficient of quartile deviation for the following data is 55,56,45,46,51

- a. 9.90099 b. 10.0099 c. 55.50 d. 45.50

Qs. 9. SD of x is 3 therefore SD of $3-2.50x$ is

- a. 5.50 b. -6.50 c. 3 d. None of these

Qs. 10. Variance of x = 36. therefore variance of y when $3x+4y=20$ is

- a. 27 b. -27 c. 20.25 d. 729

Qs. 11. Find D_5 for the following observations - 7,9,5,4,10,15,14,18,6,20,22

- a. 11.40 b. 12.40 c. 13.80 d. None of these

Qs. 12. Determine first term of A.P. with common difference of 3 and 7th term being 11.

- a. -7 b. 7 c. 6 d. None of these

Qs. 13. The values of deciles divides the total number of observations in _____ equal parts

- a. 9 b. 99 c. 3 d. None of these

Qs. 14. If $(7p+3q):(3p-2q) = 4:2$ then p:q is

- a. 5:4 b. 4:5 c. 7:2 d. None of these

Qs. 15. If $\text{Log}_a 23 = b$ then

- a. $a^{23} = b$ b. $23^a = b$ c. $ab = 23$ d. $a^b = 23$

Qs. 16. Which of the following is the measure of correlation?

- a. Coefficient of concurrent deviations
- b. Karl Pearson's product moment correlation coefficient
- c. Spearman's rank correlation coefficient
- d. All these including Scatter diagram

Qs. 17. Bivariate Data are the data collected for_____.

- a. One variable
- b. More than two variable
- c. Two variables at different points of time
- d. Two variables at the same point of time

Qs. 18. If variable Y tends to increase as variable X decreases, is called:

- a. Negative correlation
- b. inverse correlation
- c. No correlation
- d. Positive correlation

Qs. 19. The purpose of correlation analysis is:

- a. Establishing relation between two variables
- b. Predicting one variable for a given value of the other variable
- c. Measuring the extent of relation between two variables
- d. Both (a) and (c)

Qs. 20. If all the points in a scatter diagram equally distributed without depicting any pattern, the correlation coefficient 'r' is:

- a. $r = 1$
- b. $r = 0$
- c. $r = -1$
- d. $0 < r < 1$

Qs. 21. If all points seem to the near some curve, the correlation is called:

- a. Linear
- b. Non-dispersed
- c. Skewed
- d. Non-linear

Qs. 22. Which method is used when it is required to know only the direction of the movement of variables?

- a. Karl Pearson's
- b. Concurrent Deviation
- c. Spearman's
- d. Least Square

Qs. 23. When the data is ranked in order of size, importance, etc. it is called as:

- a. Concurrent correlation
- b. Karl Pearson's correlation
- c. Spearman's correlation
- d. Least square correlation

Qs. 24. When coefficient of correlation is between .50 to .75, then it is said to be...correlation of:

- a. Low degree
- b. Moderate degree
- c. High degree
- d. Zero degree

Qs. 25. The coefficient of correlation is the_____mean of two regression coefficients

- a. Arithmetic
- b. Geometric
- c. Harmonic
- d. None of these

Qs. 26. Product moment correlation coefficient is considered for

- a. Finding the nature of correlation
- b. Finding the amount of correlation
- c. Both (a) and (b)
- d. Either (a) and (b)

Qs. 27. If the sum of squares of difference of ranks, given by two judges A and B, of 5 students in 34, what is the value of rank correlation coefficient?

- a. 0.7
- b. 0.87
- c. -0.70
- d. None of these

Qs. 28. If variances of x and y series are 16 and 25 respectively, and the co-variance of two is 18, coefficient of correlation shall be:

- a. +0.45
- b. +0.9
- c. +4.22
- d. +1.22

Qs. 29. Regression analysis is concerned with

- A. Establishing a mathematical relationship between two variables
- B. Measuring the extent of association between two variables
- C. Predicting the value of the dependent variable for a given value of the independent variable
- D. Both (a) and (c)

Qs. 30. If for two variable x and y, the covariance, variance of x and variance of y are 40, 16 and 266 respectively, what is the value of the correlation coefficient?

- a. 0.625
- b. 0.01
- c. 0.4
- d. None of these

Qs. 31. The limits of Karl Pearson's coefficient of correlation are:

- a. 0 to 1
- b. 0 to -1
- c. -1 to +1 including both limits
- d. -1 to +1

Qs. 32. When accompanied by an increase in the value of series, there is a corresponding decrease in the values of another series, the correlation shall be:

- a. Positive correlation
- b. Negative correlation
- c. Indirect correlation
- d. Spurious correlation

Qs. 33. If in the scatter diagram all the points show a straight line from left to right downwards, it shall mean:

- a. Perfect negative correlation
- b. Perfect positive correlation
- c. Normal positive correlation
- d. Zero correlation

Qs. 34. Find x if $x/(x-2) = 3$

- a. 6
- b. 4
- c. 3
- d. 8

Qs. 35. What is that number of which fifth part exceeds fifteenth part by 8?

- a. 60
- b. 50
- c. 5
- d. 65

Answers : DD-40

Qs.	Answer	Qs.	Answer
1	A	21	D
2	D	22	B
3	B	23	C
4	C	24	B
5	B	25	B
6	A	26	C
7	B	27	C
8	A	28	B
9	D	29	D
10	C	30	D
11	D	31	C
12	A	32	B
13	D	33	A
14	D	34	C
15	D	35	A
16	D		
17	D		
18	A		
19	D		
20	B		

Qs. 1 The solution of the equation $(x-3)(x-5)(x-7) = 0$ is _____

- a. 3, 5, 7 b. -3, -5, -7 c. 3, -5, -7 d. -3, -5, 7

Qs. 2. The inequalities $x < 0, y > 0$ represents _____

- a. First quadrant b. Second quadrant c. Third quadrant d. Fourth quadrant

Qs. 3. The equation $5x + 7(x - 3) - 4(x + 10) = 0$ is

- a. Quadratic equation b. Linear equation c. Cubic equation d. None of these

Qs. 4. The equation $(x - a)(x - b) = 0$ is satisfied by

- a. $x = 0$ b. $x = a, b$ c. $x = -a, -b$ d. None of these

Qs. 5. The point of intersection between the straight lines $3x + 2y = 6$ and $3x - y = 12$ lie in

- a. First quadrant b. Second quadrant c. Third quadrant d. Fourth quadrant

Qs. 6. The values of x for the equation $x^2 + 9x + 18 = 6 - 4x$ are

- a. (1,12) b. (-1,-12) c. (1,-12) d. (-1,12)

Qs. 7. The solution of the equation $(p+2)(p-3) + (p+3)(p-4) = p(2p-5)$ is

- a. 6 b. 7 c. 5 d. None of these.

Qs. 8. Determine the value of x for the equation $x^2 - 8x + 16 = 0$

- a. 4, 4 b. -4, -4 c. 2, 6 d. 6, 2

Qs. 9. The point of intersection between the straight lines $x + 2y = 6$ and $3x + y = 123$ lie in

- a. 1st quadrant. b. 2nd quadrant. c. 3rd quadrant. d. 4th quadrant.

Qs. 10. Solve $x^2 - 24x + 135 = 0$ then x is

- a. 9,6 b. 9,15 c. 15,6 d. None of these

Qs. 11 If one root of the equation $x^2 + 7x + p = 0$ be reciprocal of the other then the value of p is _____.

- a. 1 b. -1 c. 7 d. -7

Qs. 12. Find the equation of the line with slope -0.25 and $(-2, -4)$ on the line

- a. $x + 4y + 18 = 0$ b. $2x + 4y + 15 = 0$ c. $2x + y + 18 = 0$ d. $x + 4xy - 18 = 0$

Qs. 13. For what value of 'K' the equation $9x^2 - 24x + K = 0$ has equal roots

- a. -16 b. -15 c. 0 d. 16

Qs. 14. If $x - y = 2$ and $3x - 2y = 9$, then: $x + y =$

- a. 5 b. 3 c. 8 d. none of these

Qs. 15. If $15x + 23y = -10$ and $3x + 4y = -2$, then: $3x + 2y =$

- a. $-2/3$ b. 0 c. 7 d. none of these

Qs. 16. If $p^2 = 5p - 3$ and $q^2 = 5q - 3$, where p is not equals to q, then the quadratic equation whose roots are p/q and q/p is

- a. $x^2 - 19x + 3 = 0$ b. $3x^2 - 19x - 3 = 0$ c. $3x^2 - 19x + 3 = 0$ d. $3x^2 + 19x + 3 = 0$

Qs. 17. The equation the line having y- intercept = -7, and parallel to the line joining the points (2, 3) and (-3, 7) is

- a. $4x + 5y + 35 = 0$ b. $5x + 4y + 28 = 0$ c. $-x + 10y + 28 = 0$ d. None of these

Qs. 18. A number 34 is to be divided into two parts such that difference between them is 8. Which is smaller one

- a. 21 b. 14 c. 13 d. None of these

Qs. 19. Two numbers whose sum is 70 and whose difference is 40 are framed, their product is

- a. 720 b. 825 c. 550 d. None of these

Qs. 20. $9x^2 - 34x + 36 = 0$ then the sum of roots is

- a. $34/9$ b. $-34/9$ c. $36/9$ d. None of these

Answers : DD-41

Qs.	Answer	Qs.	Answer
1	A	11	A
2	B	12	A
3	B	13	D
4	B	14	C
5	D	15	B
6	B	16	C
7	A	17	A
8	A	18	C
9	D	19	B
10	B	20	A

Qs. 1. $9x^2 - 34x + 36 = 0$ then find the product of the roots

- a. $-34/9$ b. $-36/9$ c. $36/9$ d. None of these

Qs. 2. Calculate the number such that it is equal to three times its difference from 56

- a. 32 b. 14 c. 42 d. None of these

Qs. 3. There are three consecutive numbers whose sum is 162. Calculate the square of middle one

- a. 2809 b. 2916 c. 2601 d. 2401

Qs. 4. The sides of Right angled triangle are $x, x+1, x-1$ (in cms.). Its hypotenuse is

- a. 6 b. 4 c. 5 d. 10

Q. 5. If an integer is added to its square, sum is 90 the integer is

- a. 9 b. -9 c. 9 or -9 d. 9 or 0

Qs. 6. Sum of a number and its square is $18/49$, the number is

- a. $3/2$ b. $7/2$ c. $5/2$ d. $2/7$

Qs. 7. Sum of two numbers is 15 and sum of their reciprocals is $3/10$, the numbers are

- a. 14, 1 b. 6, 9 c. 3, 12 d. 5, 10

Qs. 8. A number consists of two digits whose sum is 9 and when 9 is added to the number, the digits are reversed. Find the number

- a. 18 b. 45 c. 36 d. 27

Qs. 9. Weekly income of A and B are in the ratio of 3:4 and weekly expenditure in the ratio of 1:2. If each saves ₹1000/- per week, find their weekly incomes.

- a. ₹1500, ₹2000 b. ₹2500, ₹3000 c. ₹3500, ₹4000 d. None of These

Qs. 10. Solve for $x - (x+3)/(x-1) = (2x+1)/(3x-5)$

- a. $\{-7, 2\}$ b. $\{-4, 7\}$ c. $\{-6, 7\}$ d. $\{-5, -1\}$

Qs. 11. The roots of the equation $x(x+1)=6$ are

- a. 1, 6 b. -3, -2 c. 2, -3 d. 1, -6

Qs. 12. If sum of two positive numbers is 5 and sum of their squares is 17, what is the product of the numbers

- a. 22 b. 8 c. 4 d. 12

Qs. 13. If the difference between ages of two men is 10 years. 15 years ago, the age of the older was twice the age of younger. What are their present ages?

- a. 10, 15 b. 35, 40 c. 25, 35 d. 15, 25

Qs. 14. A man sells 6 radios and 4 televisions for ₹18480/- If 14 radios and 2 televisions are also sold at same amount, what is the price of television

- a. ₹1848 b. ₹840 c. ₹1680 d. ₹3360

Qs. 15. 5% of one number and 4% of other together amount to 16. If 6% of the first number and 8% of second add up to 24, then these numbers are resp.

- a. 300, 250 b. 200, 150 c. 100, 50 d. None of these

Qs. 16. Determine the value of x for the equation $x^2 - 8x + 16 = 0$

- a. 4,-4 b. -4,-4 c. 2,6 d. None of these

Qs. 17. If one root of the equation $x^2 + 7x + p = 0$ be reciprocal of the other then the value of p is _____.

- a. 1 b. -1 c. 7 d. -7

Qs. 18. If $b^2 - 4ab = 0$, the roots are _____

- a. Equal and real b. Unequal and real c. Complex numbers d. Can't say

Qs. 19. If $2x + y = 5$ and $3x - 4y = 2$ then $2xy = ?$

- a. 4 b. 6 c. 8 d. 10

Qs. 20. Sum of two numbers is 80. If 3 times of one number is 5 times of other number, then the numbers are

- a. 20,60 b. 50,30 c. 10,70 d. 25,55

Answers : DD-42

Qs.	Answer	Qs.	Answer
1	C	11	C
2	C	12	C
3	B	13	C
4	C	14	D
5	A	15	B
6	D	16	D
7	D	17	A
8	B	18	D
9	A	19	A
10	A	20	B

Qs. 1. Statistics is defined in terms of numerical data in the

- a. Singular sense b. Plural sense c. Either (a) or (b) d. Both (a) and (b).

Qs. 2. Statistics is applied in

- a. Economics b. Business Management c. Commerce and industry d. All these.

Qs. 3. An attribute is

- a. A qualitative characteristic b. A quantitative characteristic
c. A measurable characteristic d. All these.

Qs. 4. Annual income of a person is

- a. An attribute b. A discrete variable c. A continuous variable d. None of these

Qs. 5. Nationality of a student is

- a. An attribute b. A continuous variable c. A discrete variable d. (a) or (c).

Qs. 6. The data collected on the height of a group of students after recording their heights with a measuring tape are

- a. Primary data b. Secondary data c. Discrete data d. Continuous data.

Qs. 7. The primary data are collected by

- a. Interview method b. Observation method c. Questionnaire method d. All these.

Qs. 8. The best method of presentation of data is

- a. Textual b. Tabular c. Diagrammatic d. (b) and (c).

Qs. 9. The most attractive method of data presentation is

- a. Tabular b. Textual c. Diagrammatic d. (a) or (b).

Qs. 10. 'Stub' of a table is the

- a. Left part of the table describing the columns b. Right part of the table describing the columns
c. Right part of the table describing the rows d. Left part of the table describing the rows.

Qs. 11. The entire upper part of a table is known as

- a. Caption b. Stub c. Box head d. Body.

Qs. 12. In tabulation source of the data, if any, is shown in the

- a. Footnote b. Body c. Stub d. Caption.

Qs. 13. Out of 1000 persons, 25 per cent were industrial workers and the rest were agricultural workers. 300 persons enjoyed world cup matches on TV. 30 per cent of the people who had not watched world cup matches were industrial workers. What is the number of agricultural workers who had enjoyed-world cup matches on TV?

- a. 260 b. 240 c. 230 d. 250

Qs. 14. The following data relate to the marks of a group of students:

Marks	:Below 10	Below 20	Below 30	Below 40	Below 50
No. of Students :	15	38	65	84	100

How many students got marks more than 30?

- a. 65 b. 50 c. 35 d. 433

Qs. 15. Find the number of observations between 250 and 300 from the following data:

Value	:	More than 200	More than 250	More than 300	More than 350
No. of observation	:	56	38	15	0

- a. 56 b. 23 c. 15 d. 8

Qs. 16. A sample study of the people of an area revealed that total number of women were 40% and the percentage of coffee drinkers were 45 as a whole and the percentage of male coffee drinkers was 20. What was the percentage of female non-coffee drinkers?

- a. 10 b. 15 c. 18 d. 20

Qs. 17. The mean monthly salary paid to all employees in a certain company was Rs. 600. The mean monthly salaries paid to the male and female employees were Rs. 620 and Rs. 520 resp. Obtain the percentage of male to female employees in the company.

- a. 80:20
b. 20:80
c. 50:50
d. None of these

Qs. 18. A.M. of 5 observations is 15. Later on it was observed that two observations 12 and 21 were taken wrongly instead of 11 and 27. Find the correct A.M.

- a. 16
b. 15
c. 14
d. 13
e. None of these

Qs. 19. Mean of 8 observations is 14. But the record keeper came to know later on that the numbers 6 and 25 were recorded instead of 9 and 26. Now find the actual mean.

- a. 14.60
b. 14.00
c. 13.90
d. None of these

Qs. 20. The mean annual salary of all employees in a company is ₹ 25,000. The mean salary of male and female employees is ₹ 27,000 and ₹ 17,000 respectively. Find the percentage of males and females employed by the company.

- a. 80%, 20% b. 20%, 80% c. 50%, 50% d. None of these

Answers : DD-43

Qs.	Answer	Qs.	Answer
1	D	11	A
2	D	12	A
3	A	13	A
4	C	14	C
5	A	15	B
6	A	16	B
7	D	17	A
8	B	18	A
9	C	19	D
10	D	20	A

Qs. 1. The no. of measures of central tendency is

- (a) Two b. Three c. Four d. Five

Qs. 2. The words "mean" or "average" only refer to

- (a) A.M b. H.M c. G.M d. None

Qs. 3 ----- is the most stable of all the measures of central tendency.

- a. G.M. b. H.M. c. A.M. d. None

Qs. 4. Mean is of----- types.

- a. 3 b. 4 c. 8 d. 5

Qs. 5. Weighted A.M is related to

- a. G.M b. Frequency c. H.M d. None

Qs. 6. Frequencies are also called weights.

- a. True b. False c. Both d. None

Qs. 7. The algebraic sum of deviations of observations from their A.M is

- a. 2 b. -1 c. 1 d. 0

Qs. 8. The algebraic sum of deviations of 8,1,6 from the AM viz. 5 is

- a. -1 b. 0 c. 1 d. None

Qs. 9. A.M is never less than G.M

- a. True b. False c. Both d. None

Qs. 10. The value of the middlemost item when they are arranged in order of magnitude is called

- a. Standard deviation b. Mean c. Mode d. Median

Qs. 11. Median is unaffected by extreme values.

- a. True b. False c. Both d. None

Qs. 12. Median of 2,5,8,4,9,6,1 is

- a. 9 b. 8 c. 5 d. 6

Qs. 13. The value which occurs with the maximum frequency is called

- a. Median b. Mode c. Mean d. None

Qs. 14. In formula of median for grouped frequency distribution N is

- a. Total frequency b. Frequency density c. Frequency d. Cumulative frequency

Qs. 15. When all observations occur with equal frequency----- does not exist.

- a. Median b. Mode c. Mean d. None

Qs. 16. Mode of the observations 2,5,8,4,3,4,4,5,2,4,4, is

- a. 3 b. 2 c. 5 d. 4

Qs. 17. Data with 3 or more modes is known as

- a. bi-modal data b. Tri-modal data c. Multi-modal data d. None of these

Qs. 18. For the observations 5,3,6,3,5,10,7,2 there are ----- modes.

- a. 2 b. 3 c. 4 d. 5.

Qs. 19. There can 2 or more modes for the data

- a. True b. False c. Can't say d. None

Qs. 20. Mode of 2,2,2,3,3,3 is

- a. 2 b. 3 c. Both of these d. None of these

Answers : DD-44

Qs.	Answer	Qs.	Answer
1	D	11	A
2	A	12	C
3	C	13	B
4	A	14	A
5	B	15	B
6	A	16	D
7	D	17	C
8	B	18	A
9	A	19	A
10	D	20	D

Qs. 1. For 2 positive observations

- a. $GM^2 = GM \times HM$ b. $GM^2 = AM \times HM$ c. $HM^2 = AM \times GM$ d. $GM^2 = AM \times HM \times HM$

Qs. 2 ----- of a set of observations is defined to be their sum, divided by the no, of observations.

- a. H.M. b. G.M. c. A.M. d. None

Qs. 3. Simple average is sometimes called

- a. weighted average b. unweighted average c. relative average d. None

Qs. 4. Weight represents

- a. Importance b. Relative importance c. Kilograms d. Can't say

Qs. 5. Median is _____

- a. Positional average b. Magnitude wise average c. Most likely observation d. Can't say

Qs. 6. The best measure of central tendency is

- a. AM b. GM c. Median d. Mode

Qs. 7. The best measure of dispersion is

- a. Range b. Standard deviation c. Quartile deviation d. All of these

Qs. 8. The best measure of dispersion for comparison purpose is

- a. Range b. Standard deviation c. Quartile deviation d. None of these

Qs. 9. $AM > GM > HM$ is true for

- a. Same observations b. Different observations c. Can't say d. None

Qs. 10. The most appropriate measure of central tendency for open class intervals is

- a. Mean b. Median c. Mode d. None of these

Qs. 11. Number of mobile phones is an example of

- a. An attribute b. A discrete variable c. A continuous variable d. All of these

Qs. 12. Smoking habit of a person is an example of

- a. An attribute b. A discrete variable c. A continuous variable d. All of these

Qs. 13. Which of the following are types of data on the basis of collection

- a. Primary data b. Secondary data c. Both of these d. None of these

Qs. 14. Mean of 2,4,6,7 is

- a. 5 b. 6 c. 7 d. None of these

Qs. 15. Median of 2,4,6,7 is

- a. 5.55 b. 5.00 c. 5.50 d. None of these

Qs. 16. Multiplying the values of the variable by the corresponding weights and then dividing the sum of by the sum of weights is

- (a) Simple average b. Weighted average c. Both d. None

Qs. 17. Calculation of G.M is more difficult than

- (a) A.M. b. H.M c. Median d. None

Qs. 18. The marks obtained by 10 students in an examination were as follows : 70, 65, 68, 70, 75, 73, 80, 70, 83, 86. Find Mode

- a. 70 b. 75 c. 74 d. None of these

Qs. 19. For the data given below, find the missing frequency if the Arithmetic Mean is 33.

Profit Per Shop	No. of Shops
0-10	10
10-20	15
20-30	30
30-40	--
40-50	25
50-60	20

- a. 25 b. 20 c. 35 d. None of these

Qs. 20. A train runs first 25 kilometres at a speed of 30 kilometres per hour, next 50 kilometres at a speed of 40 kilometres per hour, then due to repair of the track, it covers only one kilometre at a speed of 10 kilometres per hour, and finally covers the remaining distance of 24 kilometres at a speed of 24 kilometres per hour. What is the average speed in kilometres per hour?

- a. 70 kms/hr b. 17 kms/hr c. 10 kms/hr d. None of These

Answers : DD-45

Qs.	Answer	Qs.	Answer
1	B	11	B
2	C	12	A
3	B	13	C
4	B	14	D
5	A	15	B
6	A	16	B
7	B	17	A
8	D	18	A
9	B	19	A
10	B	20	D

Qs. 16. If the relationship between two variables u and v are given by $2u+v+7=0$ and if AM of u is 10, then the AM of v is

- a. 17 b. -17 c. -27 d. 27

Qs. 17. Following is the incomplete distribution having modal mark as 44. Find mean from following data:

Marks:	0-20	20-40	40-60	60-80	80-100
No. of Students:	5	18	---	12	5

- a. 45 b. 46 c. 47 d. 48

Qs. 18. Following is the incomplete distribution of 100 students having median mark as 32. Find mean from following data:

Marks:	0-10	10-20	20-30	30-40	40-50	50-60
No. of Students:	10	---	25	30	---	20

- a. 32 b. 31 c. 32.30 d. 31.50

Qs. 19. Following are the wages of 8 workers expressed in Rupees - 82,96,52,75,70,65,50,70. Find the Range

- a. 96 b. 50 c. 46 d. None

Qs. 20. Following are the wages of 8 workers expressed in Rupees - 82,96,52,75,70,65,50,70. Find the Coefficient of Range.

- a. 3.150 b. 31.50 c. 1.513 d. None

Answers : DD-46

Qs.	Answer	Qs.	Answer
1	A	11	B
2	B	12	B
3	A	13	C
4	B	14	A
5	C	15	C
6	A	16	C
7	A	17	D
8	A	18	C
9	B	19	C
10	C	20	B

Qs. 1. If $2x+3y=10$ and Range of x is 15, what would be range of y ?

- a. 15 b. 10 c. 150 d. None of these

Qs. 2. If x and y are related as $4x+3y+11=0$ and mean deviation of x is 5.40, what is mean deviation of y ?

- a. 8.40 b. 5.50 c. 10.40 d. None of these

Qs. 3. Find Range of following data 24, 36, 753, 738, 646, 794, 422, 80

- a. 770 b. 794 c. 24 d. None

Qs. 4. Find the coefficient of Range of following data 24, 36, 753, 738, 646, 794, 422, 80

- a. 94.13 b. 100 c. 770 d. 818

Qs. 5. The coefficient of variation is 25 and mean is 20, Find the S.D.

- a. 20 b. 25 c. 100 d. None of these

Qs. 6. If AM and coefficient of variation of x are 10 and 40 respectively, what is the variance of $(15-2x)$

- a. 100 b. 1600 c. 16 d. None of these

Qs. 7. If mean and variance of 5 observations are 4.80 and 6.16 respectively. If 3 of the observations are 2,3 and 6, what are the remaining observations.

- a. 4 and 9 b. 14 and 19 c. 10 and 3 d. None of these

Qs. 8. Prakash bought 25 chairs at Rs.150 each, 15 chairs at Rs.140 each. The average price of the chair is:

- a. 140 b. 139 c. 108 d. None of these

Qs. 9. Which measures of central tendency are not affected by extreme values

- a. Mean and mode b. Mode and median
c. Mean and median d. HM and GM

Qs. 10. Among the following measures of central tendency which can give more than one value?

- a. HM b. AM c. Median d. Mode

Qs. 11. Average monthly income of all workers in a factory is Rs.600 and that of 16 supervisors is Rs.3000/-. If average monthly salary of the workers is Rs.550, the number of workers leaving aside supervisor, in the factory is

- a. 824 b. 802 c. 768 d. 744 e. None of these

Qs. 12. Shift of origin has no impact on

- a. Range b. Mean deviation c. Standard deviation d. All these

Qs. 13.A. The geometric mean of 0,5,35,69 is

- a. 10.48 b. 52.91 c. 0 d. 10

Qs. 13.B. In a frequency distribution, mid value of a class is 16 and class interval is 4. The lower limit of a class is

- a. 15 b. 12 c. 13 d. 14

Qs. 14. If AM of 6 numbers is 35. If one of the numbers is excluded, their mean is 36. The excluded number is

- a. 18 b. 30 c. 25 d. 35

Qs. 15. The combined mean of three groups is 12 and combined mean of first two groups is 3. If first, second and third groups have 2,3,5 items respectively, then find the mean of third group:

- a. 21 b. 15 c. 12 d. 13

Qs. 16. Coefficient of mean deviation about mean of first 9 natural numbers is

- a. 44.44 b. 22.20 c. 22.22 d. None of these

Qs. 17. The appropriate measure of dispersion for open end classification is

- a. Standard deviation b. Mean deviation
c. Quartile deviation d. All these measures

Qs. 18. If profits of the company remain same for last 10 months is then standard deviation of profits is

- a. 1000 b. 10 Months c. Can't say d. Zero

Qs. 19. Harmonic mean of 4,6,10 is

- a. 0.15 b. 0.52 c. 5.81 d. 2.50

Qs. 20. The method of presenting the classified data is:

- a. Tabulation b. Graphic Presentation c. Diagrammatical presentation d. All of above

Answers : DD-47

Qs.	Answer	Qs.	Answer
1	B	11	C
2	D	12	D
3	A	13 A	C
4	A	13 B	D
5	D	14	B
6	D	15	A
7	A	16	A
8	D	17	C
9	B	18	D
10	D	19	C
		20	D

- Qs. 1. Class interval of following class is of 0-9 10-19 20-29 30-39
a. 9.5 b. 10 c. 9 and 10 both d. None
- Qs. 2. Which of the statistical average is calculated by cumulative frequency
a. HM b. GM c. AM d. Median
- Qs. 3. Find sum of all observations if mean and standard deviation of 100 items are 98 and 4 respectively
a. 9800 b. 98000 c. 3280 d. 2322
- Qs. 4. If standard deviation of x is 4, What is the variance of $(19-7x)$
a. 28 b. 20 c. $7/4$ d. $4/7$ e. None of these
- Qs. 5. Out of three given numbers, the first one is twice of second and three times of third. If the average of these numbers is 88, then the difference between first and third is
a. 46 b. 72 c. 96 d. 32
- Qs. 6. If R_x and R_y denote ranges of x and y respectively where x and y are related by $3x+2y+10=0$, what would be the relation R_x and R_y
a. $R_x = R_y$ b. $2R_x = 3R_y$ c. $3R_x = 2R_y$ d. $R_x = 2R_y$
- Qs. 7. Mean and standard deviation of 30 items are found as 28 and 2, but while calculating them one item was taken as 26 in place of 38. Find the correct mean
a. 248 b. 15.40 c. 28.40 d. None of these
- Qs. 8. If $Q_3=52$ and $Q_1=12$, coefficient of quartile deviation shall be
a. 62.50 b. 40 c. 0.40 d. 64 e. None of these
- Qs. 9. The mean salary for a group of 40 female workers is 5200 per month and that for a group of 60 male workers is 6800 per month. What is the combined mean salary?
a. 6500 b. 6200 c. 6160 d. 6100
- Qs. 10. The standard deviation of, 10, 16, 10, 16, 10, 10, 16, 16 is
a. 4 b. 6 c. 3 d. 0
- Qs. 11. If there are 3 observations 15, 20, 25 then the sum of deviation of the observations from their AM is
a. 0 b. 5 c. -5 d. None of these.
- Qs. 12. If the profits of a company remains the same for the last ten months, then the standard deviation of profits for these ten months would be ?
a. Positive b. Negative c. Zero d. (a) or (c)
- Qs. 13. 'Stub' of a table is the _____ part of the table describing the _____.
a. Left, Columns b. Right, Columns c. Right, Rows d. Left, Rows
- Qs. 14. Usually _____ is the best measure of central tendency.
a. Median b. Mode c. Mean d. G.M.
- Qs. 15. What is the value of the first quartile for observations 15, 18, 10, 20, 23, 28, 12, 16?
a. 17 b. 16 c. 12.75 d. 12

Qs. 16. What is the coefficient of range for the following wages of 8 workers?

80, 65, 90, 60, 75, 70, 72, 85.

- a. 30 b. 20 c. 30 d. 20

Qs. 17. For any two numbers SD is always

- a. Twice the range. b. Half of the range. c. Square of the range. d. None of these.

Qs. 18. For any two numbers Range is always

- a. Twice the SD b. Half of the SD c. Square of the SD d. None of these.

Qs. 19. _____ is an absolute measure of dispersion.

- a. Range b. Mean Deviation c. Standard Deviation d. All these measures

Qs. 20. What is the median for the following observations - 5, 8, 6, 9, 11, 4.

- a. 6 b. 7 c. 8 d. None of these.

Answers : DD-48

Qs.	Answer	Qs.	Answer
1	B	11	A
2	D	12	C
3	A	13	D
4	E	14	C
5	C	15	C
6	C	16	D
7	C	17	B
8	A	18	A
9	C	19	D
10	C	20	B

Qs. 15. For a set of observations, the sum of absolute deviations is _____ when the deviations are taken from the median.

- a. Zero b. Maximum c. Minimum d. None of these

Qs. 16. The mean weight for a group of 40 female students is 42 kg and that for a group of 60 male students is 52 kg. What is the combined mean weight?

- a. 46 b. 47 c. 48 d. 49

Qs. 17. The wages of 8 workers expressed in rupees are 42,45,49,38,56,54,55,47. Find median wage.

- a. 47 b. 48 c. 49 d. 50

Qs. 18. Quartiles are values dividing a given set of observations into _____ equal parts.

- a. Two b. Four c. Six d. Ten

Qs. 19. The data are known to be _____ if the data, as being already collected, are used by a different person or agency.

- a. Primary b. Secondary c. Specialized d. Subsidiary

Qs. 20. The mean salary for a group of 20 female workers is ₹ 5000 per month and that for a group of 30 male workers is ₹ 6000 per month. What is combined mean salary?

- a. ₹ 5400 b. ₹ 5500 c. ₹ 5600 d. ₹ 5700

Answers : DD-49

Qs.	Answer	Qs.	Answer
1	B	11	A
2	B	12	D
3	D	13	A
4	B	14	B
5	D	15	C
6	B	16	C
7	D	17	B
8	C	18	B
9	C	19	B
10	C	20	C

1. If $y = 2 + 1.50x$ and mode of x is 15, what is the mode of y ?
 (a) 24.50 (b) 26.50 (c) 28.50 (d) 30.50

2. Find the GM of 3, 6, 12
 (a) 3 (b) 6 (c) 12 (d) None

3. Find the GM for the following distribution.

X	2	4	8	16
F	2	3	3	2

(a) 3.66 (b) 4.66 (c) 5.66 (d) 6.66

4. Find the HM for 4, 6 and 10
 (a) 2.77 (b) 3.77 (c) 4.77 (d) 5.81

5. Find the GM for the following distribution -

X	2	4	8	16
F	2	2	2	2

(a) 2.44 (b) 3.44 (c) 4.44 (d) 5.66

6. Compute AM, GM and HM for the number 6, 8, 12, 36
 (a) 15.5, 12, 7.93 (b) 15.5, 11, 8.93 (c) 15.5, 12, 9.93 (d) 15.5, 14, 10.93

7. Find the weighted AM and weighted HM of first n natural numbers, the weights being equal to the squares of the corresponding numbers

x: 1 2 3 n
 w: 1^2 2^2 3^2 n^2

(a) $[3n(n+1)] / [2(2n+1)]; (2n+1)/3$ (b) $(n+1) / (2n+1); (n+1)/3$
 (c) $(3n+2) / (2n+1); (n+2)/3$ (d) None

8. Given two positive numbers a and b , their $AM / HM = GM^2$
 (a) True (b) False (c) Both (d) None

9. The AM and GM for two observations are 5 and 4 respectively. Find the two observations
 (a) 8 and 2 (b) 7 and 3 (c) 6 and 4 (d) None

10. Find the mode and median from the following data:

Marks	Less than 10	Less than 20	Less than 30	Less than 40	Less than 50
No. of students	5	13	23	27	30

(a) 20 and 23 (b) 23.4 and 24 (c) 21.34 and 22 (d) None

11. Following are the salaries of workers of a firm expressed in thousand rupees 5, 17, 12, 23, 7, 15, 4, 18, 10, 6, 15, 9, 8, 13, 12, 2, 12, 3, 15, 14. The firm gave bonus amounting to Rs 2,000, Rs 3,000, Rs 4,000, Rs 5,000 and Rs 6,000 to the workers belonging to the salary groups 1000-5000, 6000-10000 and so on and lastly 21000-25000. Find the average bonus paid per employee.

(a) 3,250 (b) 3,550 (c) 3,650 (d) 3,750

12. Following are the wages of 8 workers expressed in rupees. 82, 96, 52, 75, 70, 65, 50, 70. Find the coefficient of range.

(a) 21.35 (b) 34.55 (c) 31.51 (d) None

13. What is the coefficient of Range for the following distribution of weights?

Weights in kgs	50-54	55-59	60-64	65-69	70-74
No. of students	12	18	23	10	3

- (a) 21.03 (b) 22.95 (c) 20.16 (d) 24.05

14. If the relationship between x and y is given by $2x + 3y = 10$ and the range of x is Rs. 15. what would be the range of y .

- (a) 15 (b) 12 (c) 10 (d) 9

15. What is the mean deviation about mean for the following numbers 5, 8, 10, 10, 12, 9

- (a) 1.62 (b) 1.67 (c) 1.74 (d) 1.56

16. Mean Deviation about Mode is a _____ measure of dispersion

- (a) Absolute (b) Relative (c) concentric (d) None

17. Compute the mean deviation about the arithmetic mean for the following data

x	1	3	5	7	9
f	5	8	9	2	1

- (a) 3.88, 44.33 (b) 2.99, 45.67 (c) 4.83, 23.87 (d) None

18. Compute the coefficient of mean deviation about median for the following distribution.

Weights in kgs.	40-50	50-60	60-70	70-80
No. of students	8	12	20	10

- (a) 60 kg (b) 62 kg (c) 61.5kg (d) 62.5kg

19. If x and y are related as $4x + 3y + 11 = 0$ and mean deviation of x is 5.40. What is the mean deviation of y ?

- (a) 7.20 (b) 4.20 (c) 5.20 (d) 8.20

20. Find the standard deviation and coefficient of variation for the following numbers 5, 8, 9, 2, 6

- (a) 2.45, 40.83 (b) 3.45, 48.92 (c) 2.65, 46.25 (d) None

Answers : DD-50

Qs.	Answer	Qs.	Answer
1	A	11	B
2	B	12	C
3	C	13	C
4	D	14	C
5	D	15	B
6	C	16	A
7	A	17	A
8	B	18	D
9	A	19	A
10	C	20	A

Qs. 1. The mode has all of the following disadvantages except

- (a) A data set may have no modal value
- (b) The mode is unduly affected by extreme value.
- (c) A multimode data set is difficult to analyze.
- (d) Every value in a data set may be a mode.

Qs.2. Measures of central tendency are known as

- (a) Averages
- (b) Difference
- (c) Both
- (d) None of these.

Qs.3. Neeraj bought 14 chairs at ₹ 150 each, 15 chair at ₹ 140 each. The average price of a chair to the nearest rupee is equal to:

- (a) ₹ 149
- (b) ₹ 195
- (c) ₹ 165
- (d) None of these

Qs.4. The words 'mean' or 'average' refer to

- (a) A.M.
- (b) G.M.
- (c) H.M.
- (d) None of these.

Qs.5. Which Measure of Central tendency is not affected by the extreme values?

- (a) Arithmetic mean and median
- (b) Mode and arithmetic mean
- (c) Median and mode
- (d) Geometric mean and harmonic mean

Qs.6. Measures, of central tendency for a given set of observation measures

- (a) The scatterness of the observations
- (b) The central location of the observations
- (c) Both (a) and (b)
- (d) None of these

Qs.7. Among the following which measure of central tendency can give' more than one value

- (a) H.M.
- b. A.M.
- c. Mode
- d. Median

Qs.8. Which of the following statements is wrong?

- (a) Mean is rigidly defined
- (b) Mean is not affected due to change in extreme observations
- (c) Mean has some mathematical properties
- (d) All of these.

Qs.9. The average has relevance for

- (a) Homogeneous population
- (b) Heterogeneous population
- (c) Both (a) and (b)
- (d) None of these.

Qs.10. The geometric mean of: 0, 5, 35, 69 is:

- (a) 10
- b. 52.91
- c. 5
- d. None of these

Qs.11. When all values occur with equal frequency, there is no

- (a) Mode
- b. Mean
- c. Median
- d None of these

Qs.12. Median can be easily obtained through

- (a) Cumulative frequency curves
- c. Frequency polygon
- (b) Histogram
- d. Frequency curve

Qs.13. A measure of central tendency tries to estimate the

- (a) central value
- b. Lower value
- c. Upper value
- d. None of these

Qs.14. The average monthly income of all workers in a factory is Rs. 600 and that of 16 supervisors is ₹ 3,000. If the average monthly salary of workers is ₹ 550, the number of workers, leaving aside supervisor, in the factory is:
(a) 868 b. 779 c. 744 d. None of these

Qs.15. Weight A.M is related to
(a) G.M. b. Frequency c. H.M. d. None of these.

Qs.16. If 0-10, and 11-20 groups are to be made in exclusive form the second group will be:
(a) 10-20 b. 11-21 c. 10.50-19.50 d. 10.50-20.50

Qs.17. The number of measures of central tendency is
(a) Two b. Three c. Four d. Five.

Qs.18. The most commonly used measure of central tendency is
(a) A.M. b. Median c. Mode d. Both G.M and H.M.

Qs.19. Average rate of speed is calculated by:
(a) Geometric mean b. Median c. Mean d. Harmonic mean

Qs.20. More laborious numerical calculations involve in G.M. than A.M.
(a) True b. False c. Both d. None of these

Answers : DD-51

Qs.	Answer	Qs.	Answer
1	B	11	A
2	A	12	A
3	D	13	A
4	A	14	D
5	C	15	B
6	B	16	D
7	C	17	D
8	B	18	A
9	B	19	D
10	D	20	A

Qs. 1. Qs. 1. If the profits of a company remain the same for the last ten months, then the standard deviation of profits for these ten months would be?

- a. Positive b. Negative c. Zero d. Cannot be predicted

Qs. 2. If x and y are related as $3x+4y=20$ and the quartile deviation of x is 12, then the quartile deviation of y is

- a. 9 b. 10 c. 8 d. 12

Qs. 3. The mean deviation about mean for the first 9 natural numbers is

- a. 22.44 b. 44.44 c. 22.22 d. None of these

Qs. 4. Which measure of dispersion is based on all the observations?

- a. Standard deviation b. Mean deviation c. Quartile deviation d. (a) and (b) but not (c)

Qs. 5. Which measure of dispersion is based on all the observations?

- a. Standard deviation b. Mean deviation c. Coefficient of variation d. All

Qs. 6. If the mean and standard deviation of x are a and b respectively, the standard Deviation of $(x-a) / b$ is

- a. -1 b. 1 c. ab d. a/b

Qs. 7. The appropriate measures of dispersions for open - end classification is

- a. Standard deviation b. Mean deviation c. Quartile deviation d. All these measures

Qs. 8. Which of the following companies A and B is more consistent so far as the payment of dividend are concerned?

Dividend paid by:	5	9	6	12	15	10	8	10
Dividend paid by B.	4	8	7	15	18	9	6	6

- a. A b. B c. Both (a) and (b) d. Neither (a) nor (b)

Qs. 9. The standard deviation for the data: 7, 9, 11, 13, 15 is:

- a. 2.561 b. 2.501 c. 2.701 d. 2.828

Qs. 10. For any two numbers standard deviation is always

- a. Twice the range b. Half of the range c. Square of the range d. None of these

Qs. 11. If the standard Deviation of x is 3, what is the variance of $(5 - 2x)$?

- a. 6 b. 36 c. 1 d. 9

Qs. 12. Disadvantages of using the range as a measure of dispersion include all of the following except

- a. It is heavily influenced by extreme values
 b. It can change drastically from one sample to the next
 c. It is difficult to calculate
 d. It is determined by only two points in the data set

Qs. 13. If R_x & R_y denote ranges of x and y respectively where x and y are related by $3x+1.2y+1=0$, what would be the relation between x and y ?

- a. $R_x=R_y$ b. $3 R_x=2 R_y$ c. $2 R_x =3 R_y$ d. None of these

Qs. 14. Mean and standard deviation of 30 items are found as 28 and 2, but while calculating them one item was taken as 26 in place of 38. Find the correct mean?

- a. 24.8 b. 15.4 c. 284 d. None of these

Qs. 15. Ratio obtained on dividing the absolute measure of dispersion by the average value from which deviation were taken is known as:

- a. Relative dispersion b. Absolute dispersion c. Central value d. Error

Qs. 16. What is the value of mean deviation about mean for the following numbers? 5, 8, 3, 4

- a. 5.20 b. 7.20 c. 1.50 d. 2.23

Qs. 17. Find value of Q_3 if coefficient of Quartile deviation = 0.39 and $Q_1 = 23.26$:

- a. 53.24 b. 21.07 c. 35.24 d. None of these

Qs. 18. If Q_3 is 52 and Q_1 is 12, coefficient of quartile deviation shall be:.

- a. 62.50 b. 40 c. 0.4 d. None of these

Qs. 19. Best average for qualitative measurements is:

- a. Median b. Harmonic mean c. Arithmetic mean d. Geometric mean

Qs. 20. If two samples of size 30 and 20 have means as 55 and 60 and variances as 16 and 25 respectively, then what would be the SD of the combined sample of size 50?

- a. 5.30 b. 5.06 c. 5.20 d. 5.35

Answers : DD-52

Qs.	Answer	Qs.	Answer
1	C	11	B
2	A	12	C
3	D	13	D
4	D	14	D
5	D	15	A
6	B	16	C
7	C	17	A
8	A	18	A
9	D	19	A
10	B	20	B

Qs. 1. The mean of Y having 50 observations is 45. If a new variable is defined as $Z = Y + 5$, the mean of the new variable is equal to:

- a. 50 b. 45 c. Cannot be calculated d. None of these

Qs. 2. In a frequency distribution table, when one or both the terminal classes are undefined, then which one of the following measures of dispersion can be used?

- a. Range b. Mean deviation c. Quartile deviation d. Standard deviation

Qs. 3. To compare the variability between two series which also differ on their unit of measurements, the measure usually used is the:

- a. Standard deviation b. Mean deviation
c. Coefficient of variation d. Inter quartile range

Qs. 4. Dispersion means:

- a. The scatterness of a set of observations b. The concentration of a set of observations
c. Both of these d. None of these

Qs. 5. Range is used in:

- a. Measurement of central tendencies b. Determining the limits of variations
c. Correlation d. Regression

Qs. 6. If one were to divide the standard deviation of a population by the mean of the same population and multiply this value by 100, one would have calculated the

- a. Standard score b. Variance c. Standard deviation d. Coefficient of variation

Qs. 7. Which is the positional measure of dispersion?

- a. Quartile deviation b. Standard deviation c. Correlation d. None of the above

Qs. 8. If the Quartile deviation of a data set is 16.875, and value of first quartile is 16.25 then value of third quartile is

- a. 40 b. 50 c. 625 d. None of these

Qs. 9. If mean and Standard deviation of a series of 20 items were 20 and 5.5 respectively but an item 15 was mistaken as 25, then what would be the correct S.D.?

- a. 5.48 b. 19.5 c. 1.95 d. None of these

Qs. 10. A shift of origin has no impact on

- a. Range b. Quartile deviation c. Standard deviation d. All these

Qs. 11. Find total value of items if mean and Standard deviation of 100 items are 980 and 4 respectively.

- a. 980 b. 9800 c. 3280 d. None of these

Qs. 12. When it comes to comparing two or more distributions we consider

- a. Relative measures of dispersion b. Absolute measures of dispersion
c. Both (a) and (b) d. Either (a) or (b)

Qs. 13. What is the mean deviation about mean for the following distribution?

Variable	5	10	15	10	25	30
Frequency	3	4	6	5	3	2

- a. 6.00 b. 5.84 c. 6.07 d. 7.20

Qs. 14. Which measures of central tendency is useful in open-end series?

- a. Mean deviation b. Standard deviation c. Quartile deviation d. None of these

Qs. 15. The square root of the Variance is known as

- a. Standard deviation b. Covariance c. Quartile deviation d. None of these

Qs. 16. The amount of deviation of the observations from central tendency is known as:

- a. Regression b. Dispersion c. Skew ness d. Correlation

Qs. 17. Standard deviation is defined as the root mean square deviation from the.

- a. Mean b. Mode c. Median d. None of these

Qs. 18. Which is the absolute measurement of dispersion

- a. Mean deviation b. Variance c. Covariance d. Coefficient of Quartile deviation

Qs. 19. If Quartile deviation is 7.4, $Q_3 = 36$, then Q_1 is.....

- a. 28.6 b. 21.2 c. 11.4 d. 14.4

Qs. 20. What is the standard deviation for the following data?

Variable	5	10	15	10	25	30
Frequency	3	4	6	5	3	2

- a. 7.88 b. 7.98 c. 6.43 d. 7.43

Answers : DD-53

Qs.	Answer	Qs.	Answer
1	A	11	D
2	C	12	A
3	C	13	B
4	A	14	D
5	B	15	A
6	D	16	B
7	A	17	A
8	B	18	A
9	A	19	B
10	D	20	D

1. The duplicate ratio of 9 : 3 is :
a. $3 : \sqrt{3}$ b. 81 : 9 c. 3 : 9 d. None of these
2. The sub duplicate ratio of 144 : 169 is
a. 13 : 12 b. 169 : 144 c. 288 : 338 d. None of these
3. The triplicate ratio of 7 : 8 is :
a. 343 : 512 b. 8 : 7 c. 21 : 24 d. None of these
4. The sub triplicate ratio of 27 : 64 is
a. $3 : 64/3$ b. 9 : 16 c. 3 : 4 d. None of these
5. Find in what ratio will the total wages of the workers of a factory be increased or decreased if there be a reduction in the number of workers in the ratio 17 : 12 and an increment in their wage rate per worker in the ratio 24 : 29.
a. The ratio in which the total wages increase is 24 : 29
b. The ratio in which the total wages decrease is 34 : 29
c. The ratio in which the total wages increase is 29 : 34
d. The ratio in which the total wages decrease is 17 : 12
6. The fourth proportional to 3, 8, 12 is
a. $5/7$ b. $7/5$ c. 32 d. 53
7. Mean proportional between 9 and 25 is :
a. 13 b. 12 c. 14 d. 15
8. What least number must be added to each one of 6, 14, 18 and 38 to make them in proportion?
a. 5 b. 3 c. 2 d. 4
9. A man 1.4 m tall casts a shadow 1.2 m long at the time when a building, casts a shadow 5.4 m long. Calculate the height of the building :
a. 6.3 m b. 3.21 m c. 4.3 m d. 5.6 m
10. The incomes of X and Y are in the ratio 3 : 2 and their expenditures in the ratio 5 : 3. If each saves ₹ 1,500 then income of X and Y respectively is :
a. ₹ 6,000 and ₹ 9,000
b. ₹ 4,500 and ₹ 6,000
c. ₹ 13,500 and ₹ 9,000
d. ₹ 9,000 and ₹ 6,000
11. The prices of a washing machine and a refrigerator are in the ratio 9 : 5. If a washing machine costs ₹ 6,800 more than a refrigerator, the price of a washing machine is :
a. ₹ 16,000 b. ₹ 16,300 c. ₹ 15,300 d. None of these
12. If Raja can walk a certain distance in 50 days when he rest 9 hours each day,. How long will it take him to walk twice as far if he walk twice as fast and rest twice as long each day?
a. 125 days b. 25 days c. 50 days d. 100 days
13. Two whole numbers whose sum is 100 cannot be in the ratio :
a. 3 : 7 b. 4 : 1 c. 3 : 4 d. 16 : 9

15. Sub-duplicate ratio of 81:625 is

- a. 9:225 b. 3:25 c. 25:3 d. None of these

16. $\log 2^x$ is equal to

- a. $x \cdot \log 2$ b. $x / \log 2$ c. Both of these d. None of these

17. Ratio compounded of a ratio and its sub-duplicate ratio is

- a. Triplicate ratio
b. Sub-Triplicate ratio
c. Sub-Duplicate ratio
d. None of these

18. 3,x,27,y are in continued proportion Find the value of x

- a. 3 b. 9 c. Can't say d. None of these

19. The vessels contain water and milk in the ratio of 1:2 and 2:5 are mixed in the ratio 1:4, the resulting mixture will have water and milk in the ratio.

- a. 31:74 b. 31:75 c. 30:77 d. None of these

20. An amount of ₹ 950 is distributed among A,B,C in the ratio of 5:11:13, what is the difference between the share of B and A

- a. 300 b. 340 c. 500 d. None of these

Answers : DD-54

Qs.	Answer	Qs.	Answer
1	B	11	C
2	D	12	A
3	A	13	C
4	C	14	C
5	B	15	D
6	C	16	A
7	D	17	D
8	C	18	B
9	A	19	A
10	D	20	D

1. A Batsman in his 17th inning makes a score of 85 and thereby increases his average by 3. What is average after 17th innings?
a. 37 b. 35 c. 36 d. None of these
2. A person divides his journey 3 equal parts and decides to travel on 3 parts at the speeds of 40,30,15 km/hr respectively. Find the average speed of whole journey.
a. 30 km/hr b.24 km/hr c. 35 km/hr d. None of these
3. Ratio compounded with that ratio is its
a. Sub-duplicate ratio b. Duplicate ratio c. Inverse ratio d. None of these
4. An automobile driver travels to a hill station at an average speed of 30 km/hr. He makes return trip at an average speed of 20 km/hr. What is the average speed of the entire distance(one way distance =200km)
a. 30 b. 20 c. 25 d. 24
5. Simplest form of the ratio 3.50:7.50 is
a. 35:75 b. 7:25 c. 15:7 d. 7:15
6. Duplicate ratio of 3:5 is
a.9:125 b. 18:50 c. 27:125 d. None of these
7. Triplicate ratio of 27:343 is
a. 3:7 b. 27²:343² c. 13:34 d. None of these
8. a,b,c,d are in proportion if ab=cd
a. True b. False c. Can't say d. None of these
9. If the denominator of the fraction exceed the numerator by 4. If numerator and denominator are both increased by 3 then the new fraction becomes 4/5, Find the original fraction
a. 14/17 b. 13/17 c. 12/15 d. 11/15
10. The cost of 7 kg sugar and 5 kg rice is ₹ 234, and the cost of 6 kg sugar and 7 kg of rice is ₹ 263. Find the cost of sugar and rice per kg.
a. ₹ 17, ₹ 23.80 b. ₹ 17.50, ₹ 23.50 c. ₹ 18, ₹ 24 d. None of these
11. ₹ 600 were divided equally among a certain number of poor children. Had there been 5 less children, each would have got ₹ 4 more. Find the original number of children
a. 28 b. 30 c. 32 d. 24
12. ₹ 630 were distributed among A, B,C so that the shares of A and B were as 2:3 and shares of B and C were 4:5, What is the share of C.
a. ₹ 270 b. ₹ 144 c. ₹ 216 d. None of these
13. If $\log_{3/2}X=3$, Find the value of x
a.9/4 b. 8/27 c. 27/8 d. None of these
14. $\log_{1/9}243 = x$, Find X
a.9/4 b. 8/27 c. 27/8 d. None of these
15. $\log_3x^3-2\log_3x-2=0$ Find x
a.9 b. 2 c. 3 d. None of these

16. If $\log_2 x + \log_4 x + \log_{16} x = 2\frac{1}{4}$; Then $x = ?$

- a. 10 b. 9 c. 8 d. 7

17. If $\log_a 3 = 2$, $\log_b 8 = 3$ then $\log_b a = ?$

- a. $\log_3 2$ b. $\log_2 3$ c. $\log_3 4$ d. $\log_4 3$

18. Find x if $\log_x 10 + \log_x 100 + \log_x 1000 = 6$

- a. 10 b. 2 c. 4 d. 6

19. If $2\log a + 3\log b - 2 = 0$ then $a^2 b^3 = ?$

- a. 10^4 b. 10 c. 10^2 d. 10^3

20. $\log_2 [\log_2 \{\log_3 (\log_3 27^3)\}] = ?$

- a. $\frac{1}{2}$ b. 1 c. 0 d. 2

Answers : DD-55

Qs.	Answer	Qs.	Answer
1	A	11	B
2	B	12	A
3	B	13	C
4	D	14	D
5	D	15	A
6	B	16	C
7	D	17	D
8	B	18	A
9	B	19	C
10	D	20	C

1. A Ratio is expressed in ----- form.
a. Simplest b. Complicated c. Moderate d. None
2. If $2\log x = 4 \log 4$, then x is equal to
a. 16 b. 4 c. 2 d. None
3. If $x:y = 5:4$ the value of $x^2y : xy^2$ is
a. 13:12 b. 12:13 c. 21:31 d. None of these
4. Inverse ratio of 1.20 : 3.60 is
a. 1:1 b. 2:3 c. 3:2 d. None of these
5. The denominator of a fraction exceeds the numerator by 2. if 5 is added to numerator the fraction increases by unity. The fraction is
a. 5/7 b. 1/3 c. 7/9 d. 3/5
6. The age of the person is twice the sum of ages of their two sons and five years ago his age was three times of sum of ages of his sons, his present age is
a. 60 years b. 52 years c. 51 years d. 50 years
7. The sum of two numbers is 45 and the mean proportional between them is 18. The numbers are
a. 15,30 B. 32,13 C. 36,9 D. 25,20
8. Duplicate ratio of 2 : 4 is
a. 1:4 b. 1:16 c. 4:166 d. None of these
9. The ratio compounded of 2:3 and 4:5 is
a. 8:15.5 b. 8:15 c. 15:8 d. 12:16
10. The number which is subtracted from each of the terms of the ratio 19:31 reducing it to 1:4 is
a. 15 b. 5 c. 1 d. None of above
11. The ratio of 2 kgs.
12.and 5 gms is
a. 1:4000 b. 2:5000 c. 2000:1 d. None of these
12. The sub triplicate ratio of triplicate of 2:3 is
a. 4:6 b. 4: 12 c. 8:27 d. 2:3:3
13. The ratio between speeds of two trains is 20:22 if first train is running at a speed of 440 km/hr then speed of second train is
a. 484 Km/hr b. 848 Km/hr c. 400 km/hr d. None of above
14. The angles of a triangle are in the ratio of 2:3:13 then the angles are
a. (20,30,140) b. (20,30,130) c. (20,20,140) d. None of above
15. The sub - duplicate ratio of 1: 4 is
a. 1:166 b. 1:2 c. 2:6 d. 12:8
16. First term of the ratio is called as
a. Antecedent b. Consequent c. Antecedent and consequent d. None of these
17. If $a:b = c:d$ then $a:c = b:d$ this property is known as
a. Alternendo b. Componendo c. Dividendo d. None of these
18. 4, xx , 9, 13.5 are in proportion then xx is
a. 6 b. 8 c. 9 d. None of these

19. Two numbers are in ratio 3:4 , If 6 is added to each of the term then the new ratio will be 4:5 then the numbers are

- a. 14,20 b. 17,19 c. 18,24 d. None of these

20. The mean proportional between 5 and 120 is

- a. 24.90 b. 24.89 c. 24.49 d. None of these

Answers : DD-56

Qs.	Answer	Qs.	Answer
1	A	11	D
2	A	12	A
3	D	13	A
4	D	14	B
5	D	15	B
6	D	16	A
7	C	17	A
8	A	18	A
9	B	19	C
10	A	20	C

1. Find Inverse ratio of 2.2 : 2.22
a. 2.22: 2.222 b. 1.11: 1.1 c. 1.111 : 1.1111 d. None of these
2. The ratio of two quantities is 5:9. If the antecedent is 25, the consequent is
a. 9 b. 45 c. 40 d. None of these.
3. The sub - duplicate ratio of 1250 : 50 is
a. 12:16 b. 1: 5 c. 5:1 d. None of these
4. If $a : b = c : d$, then $(a + b) / a = (c + d) / c$ is called as
a. Alternendo b. Componendo c. Dividendo d. None of these
5. Ratio can be expressed without unit - this sentence is
a. Correct b. Incorrect c. Can't Say d. None of these
6. $9 : 8$ is a
a. A Greater Inequality b. Less Inequality c. Ratio of equality d. None of these
7. $\log(3 \times 5 \times 7)$ is equal to
a. $\log 3 \times \log 5 \times \log 7$ b. $\log 3 + \log 5 + \log 7$ c. $\log 3 - \log 5 - \log 7$ d. 0
8. A man has only 20 paise coins and 25 paise coins in his purse. If he has 50 coins in all totaling Rs. 11.25, how many coins of each does he have
a. 15, 35 b. 25, 25 c. 40, 10 d. 30, 20
9. If $(7p+3q):(3p-2q) = 4:2$ then $p:q$ is
a. 5:4 b. 4:5 c. 7:2 d. None of these
10. If $\text{Log}_a 23 = b$ then
a. $a^{23} = b$ b. $23^a = b$ c. $ab = 23$ d. $a^b = 23$
11. If $a^2 + b^2 = 45$, and $ab = 18$ then, $(1/a) + (1/b) = ?$
a. $1/3$ b. $2/3$ c. $1/2$ d. None of these
12. Third proportional to 15 and 20 is
a. $80/3$ b. 80 c. $80/7$ d. None of these
13. The value of $\text{Log}_3(1/81)$ is
a. 4 b. 2 c. -4 d. None of these
14. If $a^2 = b^3 = c^5 = d^6$, then $\text{Log}_d abc =$
a. $3/5$ b. $1/5$ c. $31/5$ d. $16/5$
15. If $3x = 4y = 12z$ then $x:y:z$ is equal to
a. 3:2:4 b. 4:3:1 c. 6:4:3 d. 3:4:2
16. A mixture contains milk and water in the ratio of 5:2. on adding 5 litres of milk, the ratio of milk and water becomes 3:1 The quantity of water in the original mixture is
a. 25 litres b. 10 litres c. 22.75 litres d. 32.50 litres
17. $\text{Log}(1+2+3)$ is exactly equal to
a. $\log 1 + \log 2 + \log 3$ b. $\log(1 \times 2 \times 3)$ c. Both (a) and (b) d. None of these
18. If $a^2 \times \log_3 X = b \times \log_7 X$ then
a. $a=3$ b. $3a^2=b$ c. $b^2=3a$ d. None of these

19. Mr.A says to his son 'seven years ago I was seven times as old as you were, and three years later I shall be three times as old as you will be ' Find the present age of Mr.A's son

- a. 12 years b. 15 years c. 5 Years d. 7 Years

20. The compounded ratio of 4:3 and 3:4 is

- 4:4 b. 3:4 c. 4:3 d. None of these

Answers : DD-57

Qs.	Answer	Qs.	Answer
1	B	11	C
2	B	12	A
3	C	13	C
4	D	14	C
5	A	15	B
6	A	16	B
7	B	17	C
8	B	18	B
9	D	19	A
10	D	20	A

1. One third of one half of three fourth of a number is 60, the number is
a. 480 b. 520 c. 500 d. None of these
2. One half of one ninth of three eighteenth of a number is 22.50 , the number is
a. 2420 b. 2430 c. 2440 d. None of these
3. If $x^2 + y^2 = 14xy$ then : $2\log_4 + \log_x + \log_y =$
a. $\frac{1}{2} \log(x+y)$ b. $2 \log(x+y)$ c. $\log(x+y)$ d. None of these
4. If $b^2 = ac$ then $\log_a b + \log_c b = ?$
a. $2(\log_a b)(\log_c b)$ b. $2(\log_b a)(\log_b c)$ c. $2 \log_b(ac)$ d. None of these
5. $\log_2 \log_2 \log_2 x = 0$ then $x = ?$
a. 1 b. 8 c. 16 d. 4
6. $\log_a x = a$ then $x = ?$
a. a^2 b. $2a$ c. a^a d. None of these
7. The fourth proportional of 3,8,12 is
a. $5/7$ b. 32 c. $7/5$ d. 53
8. The duplicate ratio of 9:1 is
a. 18:1 b. 729:1 c. 3:1 d. 81:1
9. If 5 women and 9 girls could do a piece of work in 17 days, in how many days could 9 women and 12 girls do it. The work of 2 women be equal to that of 3 girls?
a. 12 days b. 13 days c. 15 days d. 11 days
10. What number should be subtracted from each of the numbers 17, 25, 31, 47 so that the remainders are in proportion
a. 1 b. 2 c. 3 d. 4
11. A and B can together finish a work in 8 days. If A alone can do it 24 days. B alone will finish the work in
a. 10 b. 11 c. 12 d. None of these
12. Given that $\log(1+2+3) = \log 1 + \log 2 + \log 3$, Is it TRUE?
a. Yes b. No c. Can't Say d. A and B
13. A person covers 12 km at 3 km/hr , 18 km at 9 km/hr and 24 km at 4 km/hr. Find the Average Speed in covering the whole distance
a. 4.5 km / hr b. 5 km / hr c. 10 km / hr d. None of these
14. Six boys and 5 girls are to be seated in a row such that no 2 girls and no 2 boys sit together. Find the no. of ways in which this can be done....
a. 86400 b. 85000 c. 85400 d. None of these
15. The ratio of the sum and the difference of two number is 7:1 . Find the ratio of two numbers
a. 5:3 b. 4:3 c. 4:5 d. None of these
16. The difference between a 2 digit number and the number obtained by interchanging the digit is 54. What is the difference of 2 digits of the number.
a. 4 b. 3 c. 6 d. None of these
17. If $\log_2 x + \log_8 x + \log_{32} x = 23/50$ then the value of x is
a. 8 b. 5 c. 2 d. None of these

18. The average age of 24 students and the class teacher is 16 years. If the class teachers age is excluded the average reduces by one year. What is the age of class teacher..

- a. 50 years b. 40 years c. 60 years d. None of these

19. The sum of three consecutive even numbers is 15 less than three-fourth of 60. What is the middle number

- a. 15 b. 10 c. 12 d. None of these

20. Five years ago I was thrice as old as my son and ten years later I shall be twice as my son .How old are we now?

- 50,20 b. 45,15 c. 65,25 d. None of these

Answers : DD-58

Qs.	Answer	Qs.	Answer
1	A	11	C
2	B	12	A
3	B	13	A
4	A	14	A
5	D	15	B
6	C	16	C
7	B	17	D
8	D	18	B
9	D	19	B
10	C	20	A

1. The compounded ratio of 4:3, 9:13, 26:5 and 2:15 is
a. 4:25 b. 16:25 c. 18:27 d. None of these
2. If the sum of number and its square is 182, what is the number?
a. 13 b. 14 c. 15 d. none of these
3. A bag contains one rupee, 50 paise and 25 paise coins in the ratio 10:14:18. If the total amount in the bag is ₹ 430, find the number of coins of each kind
a. 200, 280, 360 b. 280, 300, 360 c. 360, 280, 200 d. None of these
4. Father is six times as old as his son. Four years hence he will be four times as old as his son. Then the present ages are
a. 42, 8 b. 36, 6 c. 40, 10 d. None of these
5. If $\log 3 = 0.48$ and $\log 7 = 0.84$, then the value of $\log(0.03 / 0.70)$ is
a. -2.26 b. -3.26 c. -1.36 d. None of these
6. Evaluate $(0.5173)^{1/4}$
a. 0.8480 b. 0.8210 c. 0.6480 d. None of these
7. A ratio compounded on itself is called
a. Duplicate ratio b. Triplicate ratio c. Sub duplicate ratio d. None of these
8. Log of any number to the same base is
a. Unity b. Zero c. Infinite d. Can't say
9. The decimal part of log is called
a. Characteristic b. Mantissa c. Both d. None
10. Anand earns ₹ 80/- in 7 hours and Pramod ₹ 90/- in 12 hours. Ratio of their earning per hour is -
a. 32:21 b. 23:12 c. 8:9 d. None
11. P, Q, R are 3 cities. The ratio of average temperature of P, Q is 11:12 and that of P, R is 9:8. Find the ratio of average temperature of Q, R
a. 22:27 b. 27:22 c. 32:33 d. None
12. If $x:y = 3:4$, the value of $x^2y + xy^2 : x^3 + y^3$ is
a. 13:12 b. 12:13 c. 21:31 d. None
13. $2s:3t$ is the duplicate ratio of $(2s-p) : (3t-p)$, then
a. $p^2 = 6st$ b. $p = 6st$ c. $2p = 3st$ d. None
14. $A = B/2 = C/5$, then $A : B : C$ is
a. 3 : 5 : 2 b. 2 : 5 : 3 c. 1 : 2 : 5 d. None
15. If $p/q = r/s = 25/15$, then $ps : qr$
a. 3/5 b. 1/1 c. 5/3 d. None
16. If $x:y = z:w = 25:15$ then $(x+z) / (y+w)$ is
a. 1:1 b. 3:5 c. 5:3 d. None
17. If $(5x - 3y) / (5y - 3x) = 3/4$ then $x : y$ is
a. 2:9 b. 7:2 c. 7:9 d. None
18. If $x/2 = y/3 = z/7$, then $(2x - 5y + 4z) / 2y$ is
a. 6/23 b. 23/6 c. 3/2 d. None

19. 14, 16, 35, 42 are not in proportion. The 4th term for which they will be in proportion is
- a. 45 b. 40 c. 32 d. None
20. If $a:b = c:d$ then $(a+b)/a = (c+d)/c$
- a. True b. False c. Can't Say d. None

Answers : DD-59

Qs.	Answer	Qs.	Answer
1	B	11	B
2	A	12	B
3	A	13	A
4	B	14	C
5	C	15	B
6	A	16	C
7	A	17	D
8	A	18	D
9	B	19	B
10	A	20	A

1. If $a:b = 4:1$ then $\sqrt{a/b} + \sqrt{b/a}$ is
 a. $5/2$ b. 4 c. 5 d. None
2. $x^{a-b} \cdot x^{b-c} \cdot x^{c-a}$ is equal to
 a. x b. 1 c. 0 d. None
3. $(2p^2q^3/3xy)^0$ is equal to
 a. 0 b. $2/3$ c. 1 d. None
4. Which is true
 a. $2^0 > (1/2)^0$ b. $2^0 < (1/2)^0$ c. $2^0 = (1/2)^0$ d. None
5. If $x^{1/p} = y^{1/q} = z^{1/r}$, and $xyz = 1$, then value of $(p + q + r)$ is
 a. 1 b. 0 c. $1/2$ d. None
6. $(x^a/x^b)^{a+b} \times (x^b/x^c)^{b+c} \times (x^c/x^a)^{c+a} = ?$
 a. 1 b. 0 c. 2 d. None
7. $a^x = b$, $b^y = c$, $c^z = a$, then $xyz = ?$
 a. 1 b. 2 c. 3 d. None
8. $\log 6 + \log 5 = ?$
 a. $\log 30$ b. $\log 11$ c. $\log 5/6$ d. None
9. $\log 6 \times \log 5 = ?$
 a. $\log 30$ b. $\log 11$ c. $\log 6/5$ d. None
10. Log of 0.0625 to the base 2 is equal to
 a. 4 b. 5 c. 1 d. None
11. $\log 2 = 0.3010$, $\log 3 = 0.4771$, $\log 6$ is
 a. 0.9030 b. 0.9542 c. 0.7781 d. None
12. $\log 2 = 0.3010$, then $\log 0.002$ is
 a. 3.3010 b. 2.3010 c. 0.3010 d. None
13. $\log 5 = 0.6990$, $\log 3 = 0.4771$. Find $\log (50/300)$
 a. -0.7781 b. -1.2781 c. -1.6990 d. -1.7781
14. $\log 2 = x$, $\log 3 = y$, then $\log 60 = ?$
 a. $x+y+1$ b. $x+y+1$ c. $x+y-1$ d. $x-y-1$
15. $\log (1/81)$ to the base 9 is equal to
 a. 2 b. $1/2$ c. -2 d. None
16. $\log_2 3$ 1728 is equal to
 a. 2 b. 3 c. 6 d. None of these
17. The sum of the ages of 3 persons is 150 years. 10 years ago their ages were in the ratio 7:8:9. Their present ages are
 a. (45,50,55) b. (40,60,50) c. (35,45,70) d. None of these
18. On simplification $[a^m / a^{-m}]$ results in:
 a. -1 b. 0 c. 1 d. None of these
19. If $a:b = 2:5$, $b:c = 15:46$, $c:d = 92:200$ then, Find $a:d$
 a. 2:3 b. 3:192 c. 2:200 d. None of these

20. Average strength of eleven members = 11.0. Average strength of the first six members = 10.5. Average strength of the last six members = 11.5. The average strength of the sixth member is:

- a. 9.5 b. 11.5 c. 11.0 d. 10.0

Answers : DD-60

Qs.	Answer	Qs.	Answer
1	A	11	C
2	B	12	A
3	C	13	A
4	C	14	B
5	B	15	C
6	A	16	C
7	A	17	A
8	A	18	D
9	D	19	D
10	D	20	C

1. The mean proportional between 25,81 is
a. 40 b. 50 c. 45 d. None of these
2. If $\log_4(X^2 + X) - \log_4(X + 1) = 2$ then x is equal to
a. $X = 16$ b. $X = 4$ c. $X = 8$ d. None of these
3. Find the number of zeros between the decimal point and the first significant figure in the value of $(0.0504)^{12}$ given that $\log 504 = 2.702$
a. 15 b. 12 c. 16 d. 8
4. A train covered the first 5 km. of its journey at a speed of 30 km./hr and next 15km. at a speed of 45 km./hr. the Average speed of the train was :
a. 38 km/hr b. 40 km/hr c. 36 km/hr d. 42 km/hr
5. A,B,C,D are four numbers so that $A:B = 2:3$, $B:C = 4:5$, $C : D = 5:8$, then A:D is
a. 2:3 b. 3:2 c. 1:3 d. 3:1.
6. If $2^x - 2^{x-1} = 4$ then the value of x^x is
a. 2 b. 1 c. 64 d. 27
7. $\log_5 5 \cdot \log_4 9 \cdot \log_3 2$
a. 2 b. 1 c. 5 d. $3/2$.
8. The number is 7.328. Find the characteristic
a. 6 b. 0 c. -6 d. None of these
9. A scooter covers a distance of 200 km in 2 hour 40 minutes, while a motorcycle covers the same distance in 2 hours. The ratio of their speeds is
a. 2 : 3 b. 5 : 4 c. 4 : 5 d. 3 : 4
10. If a family spends on food, housing and clothing in the ratio of 5:3:2 and experiences the rise in prices of these heads by 40,30 and 20 per cent respectively, the family budget will be increased by:
a. 33 per cent b. 28 per cent c. 27 per cent d. None of these
11. A ratio equivalent to 3 : 7 is:
a. 3 : 9; b. 6 : 10; c. 9 : 21 d. 18 : 49
12. The ratio 35 : 84 in simplest form is:
a . 5 : 7; b . 7 : 12; c . 5 : 12; d . none of these
13. In a class there are 20 boys and 15 girls. The ratio of boys to girls is:
a . 4 : 3; b . 3 : 4; c . 4 : 5; d . none of these
14. Two numbers are in the ratio 7 : 9. If the sum of the numbers is 112, then the larger number is:
a . 49; b . 72; c . 63; d . 42
15. The ratio of 1.5 m to 10 cm is:
a . 1 : 15; b . 15 : 10; c . 10 : 15; d . 15 : 1
16. The ratio of 1 hour to 300 seconds is:
a . 1 : 12; b . 12 : 1; c . 1 : 5; d . 5 : 1
17. In $4 : 7 :: 16 : 28$, 7 and 16 are called
a . extreme terms; b . middle terms; c . Middle and Extreme term; d . None of these
18. The first, second and fourth terms of a proportion are 16, 24 and 54 respectively. Then the third term is:
a . 36; b . 28; c . 48; d . 32

19. If 12, 21, 72, 126 are in proportion, then:

a . $12 \times 21 = 72 \times 126$;

b . $12 \times 72 = 21 \times 126$;

c . $12 \times 126 = 21 \times 72$;

d . none of these

20. If x, y and z are in proportion, then:

a . $x : y :: z : x$;

b . $x : y :: y : z$;

c . $x : y :: z : y$;

d . $x : z :: y : z$

Answers : DD-61

Qs.	Answer	Qs.	Answer
1	C	11	C
2	A	12	C
3	A	13	A
4	B	14	C
5	C	15	D
6	D	16	B
7	B	17	B
8	B	18	A
9	D	19	C
10	A	20	B

1. 7 : 12 is equivalent to:
a. 28 : 40; b. 42 : 71; c. 72 : 42; d. 42 : 72
2. The length and breadth of a rectangle are in the ratio 3 : 1. If the breadth is 7 cm, then the length of the rectangle is:
a. 14 cm; b. 16 cm; c. 18 cm; d. 21 cm
3. The value of m, if 3, 18, m, 42 are in proportion is:
a. 6; b. 54; c. 7; d. none of these
4. Length and width of a field are in the ratio 5 : 3. If the width of the field is 42 m then its length is:
a. 100 m; b. 80 m; c. 50 m; d. 70 m
5. In a library, the ratio of number of story books to that of non-story books was 4:3 and total number of story books was 1248. When some more story books were bought, the ratio became 5:3. Find the number of story books bought.
a. 312 b. 321 c. 936 d. 1560
6. ₹ 8400 is divided among A, B, C and D in such a way that the shares of A and B, B and C, and C and D are in the ratios of 2:3, 4:5 and 6:7 respectively. The share of A is
a. ₹ 1280 b. ₹ 8400 c. ₹ 8210 d. ₹ 1320
7. The ratio of the present age of father to that of son is 7:2. After 10 years their ages will be in the ratio of 9:4. The present ages of the father is
a. 35 years b. 40 years c. 30 years d. 25 years
8. What is the fourth proportional to the numbers 2, 5, 8.
a. 40 b. 20 c. 15 d. 10
9. Ajay and Raj together have ₹ 1050. On taking ₹ 150 from Ajay, Ajay will have same amount as what Raj had earlier. Find the ratio of amounts with Ajay and Raj initially.
a. 3:4 b. 7:1 c. 1:3 d. 4:3
10. Price of each article of type P, Q, and R is ₹ 300, ₹ 180 and ₹ 120 respectively. Suresh buys articles of each type in the ratio 3:2:3 in ₹ 6480. How many articles of type Q did he purchase?
a. 8 b. 14 c. 20 d. None of the above
11. The ratio of market prices of wheat and paddy is 2:3 and the ratio of quantities consumed in a family is 5:4. Find the ratio of expenditure of wheat and paddy.
a. 6:5 b. 5:6 c. 1:1 d. 8:15
12. The ratio of numbers of girls and boys participating in sports of a school is 4:5. If the number of girls is 212, determine the number of boys participating in the sports.
a. 256 b. 265 c. 251 d. 263
13. The three numbers are in the ratio $\frac{1}{2} : \frac{2}{3} : \frac{3}{4}$. The difference between greatest and smallest numbers is 36. Find the numbers.
a. 72, 84, 108 b. 60, 72, 96 c. 72, 84, 96 d. 72, 96, 108

14. If $A:B = 2:3$, $B:C = 4:5$ and $C:D = 6:7$, then $A:B:C:D$ is
a. 18:24:30:35 b. 16:24:30:35 c. 16:22:30:35 d. 16:24:15:35
15. If $a:b = 5:7$ and $c:d = 2a:3b$, then $ac : bd$ is
a. 20:38 b. 50:147 c. 10:21 d. 50:151
16. If $x:y = 3:4$, then $(7x+3y):(7x-3y)$ is equal to
a. 5:2 b. 4:3 c. 11:3 d. 37:19
17. The product of two positive numbers is 4752 and their ratio is 11:12. The smaller of these numbers is
a. 72 b. 60 c. 66 d. 75
18. Two numbers are in ratio 2:3. If 2 be subtracted from the first and 2 be added to the second, the ratio becomes 1:2. Find the sum of the numbers.
a. 30 b. 28 c. 24 d. 10
19. How to divide 3395 in ratio of 42 : 32 : 23?
a. 1470, 1120 and 805 b. 1550, 1235 and 610
c. 1245, 1150 and 1000 d. 1764, 1022 and 529
20. $a:b = 3:7$ and $b:c = 9:5$. What is $a:b:c$?
a. 3:15:5 b. 21:16:45 c. 3:7:5 d. 27: 63:35

Answers : DD-62

Qs.	Answer	Qs.	Answer
1	D	11	B
2	D	12	B
3	C	13	D
4	D	14	B
5	A	15	B
6	A	16	C
7	A	17	C
8	B	18	A
9	D	19	A
10	A	20	D

1. Income ratio of Ramesh and Suresh is 5:6. Their spending ratio is 7:9. Ramesh saves 4000 and Suresh saves 3000. Income and spending respectively of Ramesh and Suresh are
- Ramesh - 25000, 21000; Suresh - 30000, 27000
 - Ramesh - 36000, 32000; Suresh - 30000, 27000
 - Ramesh - 30000, 27000; Suresh - 36000, 32000
 - None of the above
2. $a:b = 5:2$. What is the value of $(8a + 9b) : (8a + 2b)$?
- 22:29
 - 26:61
 - 29:22
 - 61:26
3. Find the mean proportional between 7 and 63?
- 35
 - 21
 - 27
 - 30
4. Find A:B:C:D when A:B = 2:3 ; B:C = 7:9 ; C:D = 5:7
- 70 : 105 : 135 : 189
 - 105 : 115 : 236 : 189
 - 70 : 124 : 155 : 201
 - 12 : 78 : 256 : 189
5. What is 4th proportional in 9, 13 and 153?
- 251
 - 181
 - 175
 - 221
6. Ratio of two numbers is 3:8. On adding 5 to both numbers, the ratio becomes 2:5. Which is the smaller number out of the two?
- 64
 - 120
 - 45
 - 105
7. The 3rd proportional to 18 and 54 is?
- 144
 - 72
 - 162
 - 972
8. 285 is summation of 3 numbers. Ratio between 2nd and 3rd numbers is 6:5. Ratio between 1st and 2nd numbers is 3:7. The 3rd number is?
- 135
 - 150
 - 124
 - 105
9. Which of the following two ratios is greater 17:18 and 10:11?
- 17/18
 - 10/11
 - Both are same
 - Cannot determine
10. Two numbers are in the ratio of 6 : 8. If 10 is subtracted from each, the new numbers are in the ratio 16 : 32. Find the smaller number.
- 22
 - 12
 - 38
 - 15
11. It was intended that ₹ 585 be divided among P, Q and R in the ratio of 4 : 3 : 2, but by mistake the distribution was made in the proportion of $\frac{1}{4} : \frac{1}{3} : \frac{1}{2}$. How much does 'R' gain by the error?
- ₹ 99
 - ₹ 126
 - ₹ 140
 - ₹ 152
 - None of these
12. If $a : b = 3 : 5$, $b : c = 4 : 3$ and $c : d = 4 : 5$, $a : d = ?$
- 4 : 5
 - 16 : 25
 - 64 : 25
 - None of these

13. By giving ₹ 50 to M, A would have the amount equal to what M had earlier. If the sum of the amounts with A and M is ₹ 650. What is the ratio of the amount with A to that with M earlier?
a. 7 : 4 b. 5 : 3 c. 2 : 1 d. 7 : 6
14. By giving ₹ 50 to M, A would have the amount equal to what M had earlier. If the sum of the amounts with A and M is ₹ 650. What is the ratio of the amount with A to that with M earlier?
a. 7 : 4 b. 5 : 3 c. 2 : 1 d. None of these
15. A housewife wishes to purchase three articles A, B and C from a sum of ₹ 200. The unit prices of the articles A, B and C are ₹ 20, ₹ 35 and ₹ 25 respectively. If she spends the entire amount by purchasing 5 numbers of articles of type C, what is the ratio of the number of articles purchased of type A to that of, type B?
a. 1 : 2 b. 2 : 1 c. None of these d. Cannot be determined
16. Shruti purchased several number of three articles P, Q and R in the proportion 3 : 2 : 3. If the unit costs of the articles P, Q and R are ₹ 200, ₹ 90 and ₹ 60 respectively, how many articles of Q must have been purchased in the total purchases of ₹ 4800?
a. 8 b. 10 c. 12 d. 14 e. None of these
17. If $a : b = 2 : 3$, find the value of $(3a + 5b) : (3a - b)$
a. 2 : 7 b. 7 : 1 c. 2 : 5 d. 4 : 9
18. In what ratio should the profit of ₹ 8000 be divided if X starts a business with an investment of ₹ 20000, Y invests ₹ 7500 for 4 months and Z invests ₹ 15000 after 3 months from the start of the business.
a. 16 : 2 : 3 b. 8 : 3 : 6 c. 16 : 2 : 9 d. 6 : 9 : 1
19. The ratio of two numbers is 5:9. If each number is decreased by 5, the ratio becomes 5:11. Find the numbers.
a. 30, 19 b. 21, 37 c. 15, 34 d. 15, 27
20. Two kinds of rice, 1st costs ₹ 13 per kg and 2nd costs ₹ 19 per kg are mixed together. Find the ratio in which the 2 types are mixed so that the mixture costs ₹ 14.2 per kg?
a. 3:1 b. 4:1 c. 3:4 d. 4:3

Answers : DD-63

Qs.	Answer	Qs.	Answer
1	A	11	C
2	C	12	B
3	B	13	D
4	A	14	D
5	D	15	B
6	C	16	B
7	C	17	B
8	D	18	C
9	A	19	D
10	D	20	B

1. Null set is represented by
a. $\{\Phi\}$ or 0 b. $\{\}$ or Φ c. Φ or $\{0\}$ d. None of these
2. If A and B are any two sets then $(A \cup B) \cap B$ equals to
a. B b. A c. $A \cup B$ d. Null set
3. If $f(x) = x+3$ and $g(x) = x^2$ then $f(x) \cdot g(x)$ is
a. $(x+3)^2$ b. x^2+3 c. x^2+3x^2 d. None of these
4. The domain of $\{(2,5), (3,7)\}$ is
a. (3,5) b. (2,3) c. (5,7) d. (1,2)
5. If C and D are two non empty sets $n(C) = 3$, $n(D) = 7$, $n(C \cup D) = 9$ then
a. C and D are disjoint sets c. C and D are mutually exclusive sets
b. Both (a) and (b) d. None of these
6. If M and N are two sets then $(M \cup N)^c \cap M$ is
a. Null set b. M c. N d. None of these
7. The set $\{2^x: x \text{ is any positive rational number}\}$ is a
a. Finite set b. Infinite set c. Null set d. None of these
8. $A \cap A^c$ is
a. A b. Φ c. U d. None of these
9. $A \cap A$ is
a. A b. Null set c. U d. A^c
10. If E is a set of all positive odd numbers and O is set of all positive even numbers then $(E \cup O)$ is
a. Set of natural numbers b. Set of rational numbers c. Set of whole numbers d. Empty set
11. If $A \cap B$ is null set, then $B \cap A'$ is
a. B b. A c. B' d. A'
12. $\{1-(-1)^x\}$ for all integers x is the set
a. 0 b. $\{0\}$ c. $\{2\}$ d. $\{0,2\}$
13. The number of subsets of $\{6,8,10\}$ is
a. 9 b. 6 c. 8 d. None of these
14. $A \cup A$ is equal to
a. A b. E c. Φ d. 2A
15. $A \cap \Phi$
a. E b. A c. Φ d. None of these
16. If $A \Delta B = (A-B) \cup (B-A)$ and $A = \{1,2,3,4\}$ $B = \{3,5,7\}$ then $A \Delta B$ is equal to
a. $\{1,2,4,5,7\}$ b. $\{3\}$ c. $\{1,2,3,4,5,7\}$ d. None of these
17. If R is the set of isosceles right angled triangles and I is set of isosceles triangles, then
a. $R = I$ b. $R \supset I$ c. $R \subset I$ d. None of these

18. After qualifying out of 400 professionals 112 joined industry, 120 started practice, 160 joined as paid assistants. There were 32 who were in both practice and service, 40 in both practice and assistantship and 14 in both industry and assistantship. There were 12 who did all the three. Find How many could not get any of these .

- a. 82 b. 244 c. 122 d. None of these

19. Find $f^{-1}(x)$, if $f(x) = x^2$

- a. $1/x^2$ b. x c. $2x$ d. None of the above

20. If $V = \{x : x+2=0\}$, $R = \{x : x^2+2x=0\}$ and $S = \{x : x^2+x-2=0\}$ are equal to each other, then: $x = ?$

- a. -2 b. 2 c. $\frac{1}{2}$ d. None of these

Answers : DD-64

Qs.	Answer	Qs.	Answer
1	B	11	A
2	A	12	D
3	D	13	C
4	B	14	A
5	D	15	C
6	A	16	A
7	B	17	C
8	B	18	A
9	A	19	B
10	A	20	A

1. A set has 20 elements, B has 30 elements and $(A \cup B)$ has 45 elements, then the number of elements in $(A \cap B)$ is
 a. 15 b. 5 c. 10 d. None of these
2. Which of the following is null set
 a. $A = \{x : x \text{ is } > 1 \text{ and } x \text{ is } < 1\}$ b. $B = \{x : x + 3 = 3\}$
 c. $C = \{8\}$ d. $D = \{x : x \geq 1 \text{ and } x \leq 1\}$
3. In a population of 50,000 of a town, 28,000 read newspaper X and 23,000 read Y while 4,000 read both. Then number of persons who read neither X nor Y is
 a. 2,000 b. 3,000 c. 2,500 d. None of these
4. If $A = \{x : x^2 - 5x + 6 = 0\}$, $B = \{2, 4\}$, $C = \{4, 5\}$, then $A \times (B \cap C)$ is
 a. $\{(2, 4), (3, 4)\}$ b. $\{(4, 2), (4, 3)\}$ c. $\{(2, 4), (3, 4), (4, 4)\}$ d. $\{(2, 2), (3, 3), (4, 4), (5, 5)\}$
5. If $f(x)$ is a linear function such that $f(0)=2$ and $f(1)=5$ then $f(x)=?$
 a. $2x+5$ b. $5x+2$ c. $3x+2$ d. None of these
6. If $f(x)=x^2+x+1$ and $f(x+1)=f(x)$ then $x=?$
 a. -1 b. 0 c. 1 d. None of these
7. If $f(2x+3)=12x$ Find $f(x)$
 a. $8x-9$ b. $2x+3$ c. $7x+2$ d. None of these
8. If $f(x)=5-4x$, where $-2 \leq x \leq 4$, then the Range of the function f is given by
 a. $-11 \leq f(x) \leq 0$ b. $0 \leq f(x) \leq 13$ c. $-11 \leq f(x) \leq 13$ d. None of these
9. If $f(x) = \log [x+(1+x^2)^{1/2}]$, then the function f is
 a. Even b. Odd c. Neither odd nor even d. None of these
10. If $f(x) = x^2 \cdot \log [(1+x)/(1-x)]$, then the function f is
 a. Even b. Odd c. Neither odd nor even d. None of these
11. If $A = \{1, 2, 3\}$ and $B = \{3, 4\}$ and $C = \{5, 6\}$ then $(A \times B) \cup (B \times C) =$
 a. $\{3, 4\}$ b. $\{(1, 3), (2, 4), (3, 3)\}$ c. $\{(3, 3), (4, 5), (4, 6)\}$ d. None of these
12. The number of non-empty subsets of a set $\{0, 1, 2, 3, 4\}$ is
 a. 120 b. 30 c. 31 d. 32
13. A survey shows that 74% of Indians like grapes, whereas 68% like bananas. What % of Indians like both grapes and bananas?
 a. 44% b. 42% c. 46% d. None of these
14. The number of proper subsets of the set $\{6, 8, 11, 14\}$ is
 a. 9 b. 6 c. 8 d. None of these
15. Given $A = \{2, 3\}$, $B = \{4, 5\}$, $C = \{5, 6\}$ then $A \times (B \cap C)$ is
 a. $\{(2, 5), (3, 5)\}$ b. $\{(5, 2), (5, 3)\}$ c. $\{(2, 3), (5, 5)\}$ d. None of these
16. If set A has 32 elements, B has 42 elements and $(A \cup B)$ has 62 elements, then the number of elements in $(A \cap B)$ is
 a. 12 b. 74 c. 10 d. None of these

17. If $f(x)=1/(1-x)$ and $g(x)=(x-1)/x$ then $(g.f)(x)=$

- a. $x-1$ b. x c. $x+1$ d. $1/x$

18. If $A=\{1,2,3,4,5\}$ and $B=\{2,3,6,7\}$ then the number of elements in the set $(A \times B) \cap (B \times A)$ is equal to

- a. 4 b. 5 c. 10 d. 20

19. Null set is also called as:

- a. Empty set b. Void set c. Both A and B d. None of these.

20. If $f(x)=3x+4$ for all x , then $f^{-1}(x)=$

- a. $(12x-1)/7$ b. $(3x-1)/4$ c. $(x-3)/4$ d. $(x-4)/3$

Answers : DD-65

Qs.	Answer	Qs.	Answer
1	B	11	D
2	A	12	C
3	B	13	B
4	A	14	D
5	C	15	A
6	A	16	A
7	D	17	B
8	C	18	A
9	B	19	C
10	B	20	D

1. If $h(x)=10^{1+x}$ where $0 \leq x \leq 9$, then the Range of the function h is given by
 a. $1 \leq h(x) \leq 10$ b. $0 \leq h(x) \leq 10^{10}$ c. $10 \leq h(x) \leq 10^{10}$ d. None of these
2. If $f(x)=e^x$ then : $f(p+q)=$
 a. $f(p) + f(q)$ b. $f(p) - f(q)$ c. $f(p) \times f(q)$ d. $f(p) / f(q)$
3. If $f(x)$ and $g(x)$ are two functions of x such that $f(x) + g(x) = e^x$ and $f(x) - g(x) = e^{-x}$ then,
 a. $f(x)$ is odd function b. $g(x)$ is odd function
 c. $f(x)$ is even function d. Option (b) and (c)
4. If $y=h(x)=(px-q)/(qx-p)$ then $x=?$
 a. $h(1/y)$ b. $h(-y)$ c. $h(y)$ d. None of these
5. A set of intelligent students in a class is
 a. A null set b. A singleton set c. A finite set d. Not a well-defines collection
6. In a group of 1000 people, there are 750 who can speak Hindi and 400 can speak Bengali. If everyone speaks atleast one of two languages, then the number of people who can speak both Hindi and Bengali is
 a. 150 b. 600 c. 250 d. None of these
7. In a group of 1000 people, there are 750 who can speak Hindi and 400 can speak Bengali. If everyone speaks atleast one of two languages, then the number of people who can speak only Hindi is
 a. 150 b. 600 c. 250 d. None of these
8. In a group of 1000 people, there are 750 who can speak Hindi and 400 can speak Bengali. If everyone speaks atleast one of two languages, then the number of people who can speak only Bengali is
 a. 150 b. 600 c. 250 d. None of these
9. In a class of 100 students, 60 play cricket, 50 play Hockey, and 30 play both. Then the number of students who play only one of two games is –
 a. 80 b. 50 c. 30 d. None of these
10. If $f(x+1) = f(x-1)$, where $f(x)=x^2-2x+3$, then $x=?$
 a. 1 b. 2 c. 3 d. None of these
11. If $f(x+1) = f(x+2)$, where $f(x)=1+x-x^2$, then $x=?$
 a. -2 b. 0 c. 1 d. -1 e. None of these
12. If $f(x-1) = x^2$, where $f(x+1)=?$
 a. x^2+2x+1 b. x^2+4x+1 c. x^2+4x+4 d. None of these
13. If $f(x) = 3x+4$ then $f(x-4 / 3)=?$
 a. 1 b. x c. 0 d. None of these
14. If $f(x) = 2x-5$ then $f^{-1}(x)$ is
 a. $2x+5$ b. $-2x+5$ c. $(x+2)/2$ d. None of these
15. If y is $f(x) = (3x+1) / (8-3x)$ then $f^{-1}(3)$ is
 a. $23/12$ b. $3/8$ c. $-5/3$ d. None of these
16. If A and B are any two sets, then $A \cup (A \cap B)$ is equal to
 a. A b. B c. A' d. None of these

17. A and B are two sets then $A \cap (A \cup B)'$ is equal to

- a. B b. \emptyset c. \emptyset d. None of these

18. In a school 21 students play basket ball, 26 students hockey and 29 play football. 14 students play hockey and basket-ball, 15 play hockey and football and 12 play football and basketball. If 8 students play all the three games, what is the total number of players?

- a. 45 b. 44 c. 34 d. 43

19. The domain of $(1,7), (2,6)$ is

- a. (1, 6) b. (7, 6) c. (1, 2) d. (6, 7)

20. If x is an integer, then the set $\{x: 0 < x < 5\} = ?$

- a. $\{0,1,2,3,4,5\}$ b. $\{1,2,3,4\}$ c. $\{1,2,3,4,5\}$ d. None of these

Answers : DD-66

Qs.	Answer	Qs.	Answer
1	C	11	D
2	C	12	C
3	D	13	B
4	C	14	D
5	D	15	A
6	A	16	A
7	B	17	C
8	C	18	D
9	B	19	C
10	A	20	B

1. A group has 20 persons, 8 drink tea but not coffee and 13 drink tea. The number of persons who drink coffee but not tea is –
 - a. 6
 - b. 7
 - c. 1
 - d. None of these
2. If $f(x+1)=4x+5$, then $f(x)=$
 - a. $3x+4$
 - b. $4x+1$
 - c. $4x+3$
 - d. None of these
3. Let $U = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$, $A = \{1, 2, 5\}$, $B = \{6, 7\}$ Then $A \cap U$ is
 - a. B'
 - b. A
 - c. A'
 - d. B
4. If $f(x) = 3x+5$ and $g(x) = 6x+100$, Find $g[f(2x)]$
 - a. $16x+200$
 - b. $9x-300$
 - c. $f(x)$
 - d. None of these
5. Let $S=\{0,1,5,4,7\}$ then the total number of subsets of S is
 - a. 64
 - b. 32
 - c. 40
 - d. 20
6. Let A and B are two sets then $(A \cap B)$ is equal to
 - a. $A' \cap B'$
 - b. $A' \cup B'$
 - c. $A \cap B$
 - d. $A \cup B$
7. If $A \subseteq B$ then
 - a. $A' \subseteq B'$
 - b. $A' = B'$
 - c. $B' \subseteq A'$
 - d. None of these
8. $f'(x) = 3x^2 + 2$ and $f(1) = 3$ then $f(0)$ is
 - a. 3
 - b. 1
 - c. 2
 - d. 0
9. If A is any set then
 - a. $A \cup A' = \Phi$
 - b. $A \cup A' = U$
 - c. $A \cap A' = U$
 - d. None of these
10. If $A = \{0,1\}$, $B = \{1,0\}$ then $A \times B$ is equal to
 - a. $\{0,1,1,0\}$
 - b. $\{(0,1),(1,0)\}$
 - c. $\{0,0\}$
 - d. $\{(0,1),(0,0),(1,1),(1,0)\}$
11. If $f(x-1) = 2x - 2$, then value of $f(16)$ is
 - a. 16
 - b. 15
 - c. 32
 - d. Can't find from given information
12. The difference of $A - B$ is equal to
 - a. $A \cap B$
 - b. $A' \cap B$
 - c. $A \cap B'$
 - d. $A' \cap B'$
13. Let $X = \{1,2,3,4,5,6,7,8,9,10\}$ be the universal set & $A=\{2, 4, 6\}$, $B=\{1, 3, 7\}$, then $A' \cap B'$ is equal to
 - a. $\{5, 8, 9, 10\}$
 - b. $\{2, 5, 6, 8, 9,10\}$
 - c. $\{1,3,5,7,8,9,10,\}$
 - d. $\{2, 4, 6, 8, 9, 10\}$.
14. If $f(x) = x^3+3$ then the inverse of function is
 - a. $f^{-1}(x) = (x - 3)^{1/3}$
 - b. $f^{-1}(x) = (x - 3)^{-1/3}$
 - c. $f^{-1}(x) = (x + 3)^{1/3}$
 - d. None
15. If $f(x) = e^{ax^2+bx+c}$ the $f'(x)$ is
 - a. e^{ax^2+bx+c}
 - b. $e^{ax^2+bx+c} \cdot (2ax+b)$
 - c. $2ax+b$
 - d. None of these

Answers : DD-67

Qs.	Answer	Qs.	Answer
1	B	11	C
2	B	12	C
3	B	13	A
4	D	14	A
5	B	15	B
6	C		
7	C		
8	D		
9	B		
10	D		

1. If the value of correlation coefficient is positive, then the points in a scatter diagram tend to cluster.
 - a. From lower left corner to upper right corner.
 - b. From lower left corner to lower right corner
 - c. From lower right corner to upper left corner
 - d. From lower right corner to upper right corner.
2. Product moment correlation coefficient may be defined as the ratio of
 - a. The product of standard deviations of the two variables to the covariance between them.
 - b. The covariance between the variables to the product of the variances of them.
 - c. The covariance between the variables to the product of their standard deviations.
 - d. Either (b) or (c)
3. Since Blood Pressure of a person depends on age, we need consider
 - a. The regression equation of Blood Pressure on age
 - b. The regression equation of age on Blood Pressure
 - c. Both (a) and (b)
 - d. Either (a) or (b)
4. If $\text{cov}(x, y) = 15$, what restrictions should be put for the standard deviations of x & y ?
 - a. No restriction
 - b. The product of the standard deviations should be more than 15
 - c. The product of the standard deviations should be less than or equal to 15
 - d. The sum of the standard deviations should be less than 15
5. If the sum of squares of difference of ranks, given by two judges A & B, of 8 students is 21, what is the value of rank correlation coefficient?
 - a. 0.70
 - b. 0.65
 - c. 0.75
 - d. 0.8
6. If the rank correlation coefficient between marks in management and mathematics for a group of student is 0.6 and the sum of squares of the difference in ranks is 66, what is the number of students in the group?
 - a. 10
 - b. 9
 - c. 8
 - d. 11
7. While computing rank correlation coefficient between profit and investment for the last 6 years of a company the difference in rank for a year was taken 3 instead of 4. What is the rectified rank correlation coefficient if it is known that the original value of the rank correlation coefficient was 0.4?
 - a. 0.30
 - b. 0.20
 - c. 0.25
 - d. 0.28
8. For 10 pairs of observations, no. of concurrent deviations was found to be 4. What is the value of the coefficient of concurrent deviation?
 - a. $\sqrt{0.2}$
 - b. $-\sqrt{0.2}$
 - c. $1/3$
 - d. $-1/3$
9. Given the regression equations as $3x+y=13$ and $2x+5y=20$, which one is the regression equation of y on x ?
 - a. 1st equation
 - b. 2nd equation
 - c. Both
 - d. None of these
10. Formula of coefficient of determination is
 - a. r^2
 - b. $1-r^2$
 - c. $(1-r)^2$
 - d. None of these
11. Formula of coefficient of non-determination is
 - a. r^2
 - b. $1-r^2$
 - c. $(1-r)^2$
 - d. None of these
12. For a two way frequency table having $(m \times n)$ classification the total number of cells is:
 - a. m
 - b. n
 - c. $m + n$
 - d. mn

13. For a $(m \times n)$ two way or bivariate frequency table, the maximum number of marginal distribution is
a. 1 b. 2 c. $m + n$ d. $m.n$
14. If $r = 0$, then
a. There is a perfect correlation between x & y c. x & y are not correlated
b. There is a positive correlation between x & y d. Do not exist.
15. If covariance $(x, y) < 0$; then the relation between two variable is
a. Positive b. Negative c. (a) or (b) d. None of these
16. Consider the two regression lines $3x + 2y = 26$ & $6x + y = 31$. Find the mean values of x and y .
a. $x = 4$ & $y = 7$ b. $x = 7$ & $y = 4$ c. $x = 5$ & $y = 6$ d. None of these
17. Consider the two regression lines $3x + 2y = 26$ & $6x + y = 31$. Find the correlation coefficient of x and y .
a. 0.5 b. -0.5 c. 0.6 d. None of these
18. The two regression lines are $5x = 22 + y$ & $64x = 24 + 45y$. Find the Standard Deviation of y .
a. 4 b. 5 c. Cannot determine d. None of these
19. Find the coefficient of correlation between the following set of observation :
x : 69 85
y : 70 87
a. 1 b. -1 c. 0 d. None of these
20. Find the coefficient of correlation between the following set of observation :
x : 102 109
y : 50 48
a. 1 b. -1 c. 0 d. None of these

Answers : DD-68

Qs.	Answer	Qs.	Answer
1	A	11	B
2	C	12	D
3	A	13	C
4	B	14	C
5	C	15	B
6	A	16	A
7	B	17	B
8	D	18	C
9	B	19	A
10	A	20	B

1. For the bivariate data $[(x,y)] = [(20,5), (21,4), (22,3)]$, the correlation coefficient between x and y is
a. 0 b. 1 c. -1 d. 0.5
2. The regression of y on x is $2y + 3x = 4$ & the correlation coefficient between x & y is 0.8. The statement is:
a. True b. False c. Can't say d. None of these
3. The correlation coefficient of $3x$ and $-2y$ is the same as the correlation coefficient of x & y . This statement is :
a. True b. False c. Can't say d. None of these
4. The value of spearman's rank correlation coefficient of a certain number of observations was to be $2/3$. The sum of squares of differences between the corresponding ranks was 55. Find the number of pairs.
a. 10 b. 12 c. 11 d. None of these
5. The equation of two lines of regression is $4x + 3y + 7 = 0$ & $3x + 4y + 8 = 0$. The correlation coefficient between x & y is
a. 1.25 b. 0.25 c. -0.75 d. None of these
6. The co-variance between the two variables is
a. Always positive b. Always negative c. Always zero. Either positive or negative or zero
7. Two regression coefficients b_{xy} & b_{yx} are 1.2 & -0.5. This is
a. True b. False c. Either (a) or (b) d. None of these
8. In case of 'Production and price per unit' - correlation is
a. Positive b. Negative c. Zero d. None
9. The correlation coefficient r is the of the two regression coefficients
a. A.M. b. G.M. c. H.M. d. None
10. If variable Y tends to increase as variable X decreases, is called:
a. Negative correlation b. Inverse correlation c. No correlation d. Positive correlation
11. The purpose of correlation analysis is:
a. Establishing relation between two variables
b. Predicting one variable for a given value of the other variable
c. Measuring the extent of relation between two variables
d. Both (a) and (c)
12. If all the points in a scatter diagram equally distributed without depicting any pattern, the correlation coefficient ' r ' is:
a. $r = 1$ b. $r = 0$ c. $r = -1$ d. $0 < r < 1$
13. When $r = 0$ then $cov(x,y)$ is equal to
a. +1 b. -1 c. 0 d. None of these
14. Which method is used when it is required to know only the direction of the movement of variables?
a. Karl Pearson's b. Concurrent Deviation c. Spearman's d. Least Square

15. Which of the following is the measure of correlation?

- a. Coefficient of concurrent deviations
- b. Karl Pearson's product moment correlation coefficient
- c. Spearman's rank correlation coefficient
- d. All these including Scatter diagram

16. When coefficient of correlation is between .50 to .75, then it is said to be...correlation of:

- a. Low degree
- b. Moderate degree
- c. High degree
- d. Zero degree

17. Spearman's Ranking method of finding correlation is used when we deal with_____characteristics of data.

- a. Quantitative
- b. Qualitative
- c. Both a & b above
- d. Either a or b above

18. If the sum of squares of difference of ranks, given by two judges A and B, of 5 students is 34, what is the value of rank correlation coefficient?

- a. 0.7
- b. 0.87
- c. -0.70
- d. None of these

19. If variances of x and y series are 16 and 25 respectively, and the co-variance of two is 18, coefficient of correlation shall be:

- a. + 0.45
- b. + 0.9
- c. + 4.22
- d. + 1.22

20. If the relation between the two variables is $2x + 3y = 4$, then the correlation coefficient between them is:

- a. -1
- b. 1
- c. - 2/3
- d. None of these

Answers : DD-69

Qs.	Answer	Qs.	Answer
1	C	11	D
2	B	12	B
3	B	13	C
4	A	14	B
5	C	15	D
6	D	16	B
7	B	17	C
8	B	18	C
9	B	19	B
10	A	20	A

1. If the mean deviation of a distribution is 20.20, the standard deviation of the distribution is:
 a. 12.15 b. 25.25 c. 20.20 d. None of these
2. If for two variable x and y, the covariance, variance of x and variance of y are 40, 16 and 266 respectively, what is the value of the correlation coefficient?
 a. 0.625 b. 0.01 c. 0.4 d. None of these
3. The limits of Karl Pearson's coefficient of correlation are:
 a. 0 to 1 b. 0 to -1 c. -1 to +1 including both limits d. -1 to +1
4. The regression equation of profit (x) on sale (y) of a certain firm is given by $3y - 5x + 108 = 0$. The variance of profit is $(9/16)$ th of the variance of the sale. The coefficient of correlation between sales and profits is:
 a. 0.6 b. 0.7 c. 0.8 d. 0.5.
5. If in the scatter diagram all the points show a straight line from left to right downwards, it shall mean:
 a. Perfect negative correlation b. Perfect positive correlation
 c. Normal positive correlation d. Zero correlation
6. When cost of living increases, the standard of living improves, This is
 a. True b. False c. Either of these d. None of these
7. Rank correlation coefficient of following set is
- | | | | | | |
|-------------|---|---|---|---|---|
| Rank of x - | 3 | 4 | 5 | 1 | 2 |
| Rank of y - | 3 | 2 | 1 | 5 | 4 |
- a. 1 b. 0 c. -1 d. -0.80
8. The coefficient of correlation between two variables X and Y is 0.48. The Cov (X,Y) = 36, SD of X = 16, then the standard deviation of Y is given by:
 a. 18.75 b. -18.75 c. 16.75 d. None of these
9. If x and y satisfy the relationship $y = -5 + 7x$, the value of r is
 a. 0 b. -1 c. +1 d. None of these
10. In a regression analysis problem, the following data is given; The regression lines are: $x + 2y - 5 = 0$, $2x + 3y = 8$ and variance of x = 12. The value of variance of y is:
 a. 2 b. 3 c. 5 d. 4.
11. For finding the degree of agreement about beauty between two Judges in a Beauty Contest, we use _____
 a. Scatter diagram b. Coefficient of rank correlation
 c. Coefficient of correlation d. Coefficient of concurrent deviation
12. AM of x = 65, AM of y = 67, SD of x = 2.50, SD of y = 3.50, $b_{xy} = 0.571$ the value of r is : -
 a. 0.6 b. 0.7 c. 0.8 d. 0.9
13. If there is a decrease in a series at constant rate, the graph will be a:
 a. Hyperbola b. A straight line from left top to right bottom.
 c. A convex curve d. None of these.

14. Given is the following information:

	X	Y
Arithmetic mean	6	8
Standard deviation	5	40/3.

Coefficient of correlation between X and Y=8/15. The regression coefficient of Y on X is:

- a. 1.422 b. 1.322 c. 2.422 d. 2.322.

15. The rank according to two attributes in a sample are given below:

R ₁ :	1	2	3	4	5
R ₂ :	5	4	3	2	1

The Spearman's rank correlation coefficient is:

- a. 1.00 b. - 1.00 c. 0.50 d. - 0.50

16. The regression line of y on x is $5y + 3x = 5$ and that of x on y is $3y + 5x = 2$. The correlation coefficient between x and y is:

- a. -0.6 b. 0.6 c. -0.7 d. 0.7

17. Regression coefficient of x on y is:

- a. b_{xy} b. $b_{xy} \cdot b_{yx}$ c. r d. None of these

18. If $u + 5x = 6$ and $3y - 7v = 20$ and the correlation coefficient between x and y is 0.58 then what would be the correlation coefficient between u and v?

- a. 0.58 b. -0.58 c. - 0.84 d. 0.84

19. The correlation between the speed of an automobile and the distance travelled by it after applying the brakes is

- a. Negative b. Zero c. Positive d. None of these

20. Karl Pearson's coefficient of correlation between two variables X & Y is 0.52, their covariance is +7.8. If the variance of X is 16, then the standard deviation of Y series is:

- a. 2.85 b. 3.25 c. 1.25 d. 3.75

Answers : DD-70

Qs.	Answer	Qs.	Answer
1	B	11	B
2	D	12	C
3	C	13	B
4	C	14	A
5	A	15	B
6	B	16	A
7	C	17	A
8	D	18	B
9	C	19	C
10	D	20	D

1. If $r = 0.40$, Mean of $x = 25$, mean of $y = 40$, SD of $x = 2$, SD of $y = 4$. Find regression line of x on y
a. $x = 17 + 0.20y$ b. $Y = 17 + 0.20x$ c. Both of these d. None of these
2. If Regression line of y on x is $8x + 5y = 33$ find regression coefficient of y on x
a. $-8/5$ b. $-5/8$ c. $33/5$ d. $5/33$
3. Bivariate Data are the data collected for _____.
a. One variable b. More than two variable
c. Two variables at different points of time d. Two variables at the same point of time
4. If all points seem to the near some curve, the correlation is called:
a. Linear b. Non-dispersed c. Skewed d. Non-linear
5. When the data is ranked in order of size, importance, etc. it is called as:
a. Concurrent correlation b. Karl Pearson's correlation
c. Spearmen's correlation d. Least square correlation
6. Product moment correlation coefficient is considered for
a. Finding the nature of correlation b. Finding the amount of correlation
c. Both (a) and (b) d. Either (a) and (b)
7. Regression analysis is concerned with
a. Establishing a mathematical relationship between two variables
b. Measuring the extent of association between two variables
c. Predicting the value of the dependent variable for a given value of the independent variable
d. Both (a) and (c)
8. When accompanied by an increase in the value of series, there is a corresponding decrease in the values of another series, the correlation shall be:
a. Positive correlation b. Negative correlation
c. Indirect correlation d. Spurious correlation
9. If $b_{xy} = 0.60$ and $b_{yx} = 10.56$ then find the value of 'r'
a. 0.60×10.56 b. 6.336 c. 1 d. Incorrect data
10. If AM and coefficient of variation of x are 10 and 40 respectively, what is the variance of $(15.45 - 2.50x)$
a. 9 b. 10 c. 11 d. None of these
11. Which of the following is the measure of regression
a. Coefficient of concurrent deviations
b. Karl Pearson's correlation coefficient
c. Both of above
d. None of above
12. $x = 0.85y$ and $y = 0.89x$ are two equations of regression lines. If SD of $y = 3.0$, then the value of SD of x is:
a. 2.73 b. 2.93 c. 2.83 d. 2.63
13. If the amount of change in one variable tends to bear a constant ratio to the amount of change in the other variable, then correlation is said to be
a. Non-linear b. Linear c. Both d. None

14. Which of the following statements is false in relation to Regression equations & Regression coefficients:

- a. The two regression lines perpendicular to each other.
- b. The geometric mean of the two regression coefficients is equal to the correlation coefficient.
- c. If one of the regression coefficient is greater than unity, the other must be less than unity.
- d. The arithmetic mean of the regression coefficients is less than correlation coefficient.

15. For some bivariate data, the following results were obtained: the mean value of $X = 53.2$, the mean value of $Y = 27.9$, the regression coefficient of Y on $X = -1.5$ and the regression coefficient of X on $Y = -0.2$. Find the most probable value of Y when $X = 60$

- a. 17.7
- b. 15.89
- c. 71.78
- d. None of the above.

16. In a Bivariate distribution if the rank correlation coefficient $R = 0.1785$, $\Sigma d^2 = 46$. Then the number of terms n is:

- a. 9
- b. 8
- c. 7
- d. 10

17. You are given the following data for the variables x and y . AM of $x = 36$, AM of $y = 85$, SD of $x = 11$, SD of $y = 8$ and $r = 0.66$. The value of x when $y = 75$, is:

- a. 25.93
- b. 26.93
- c. 24.93
- d. 27.93

18. Given the following data on two variables X and Y :

AM of $X = 5$, AM of $Y = 4$, $b_{yx} = 0.8$, the regression equation of Y on X is :

- a. $4Y = 5X$
- b. $5X = 4Y$
- c. $3X = 4Y$
- d. $5Y = 4X$.

19. Sale of cold drinks and temperature. The correlation is

- a. Positive
- b. Negative
- c. Zero
- d. None

20. The equations of two regression lines obtained in a correlation analysis are: $3x + 12y = 9$ and $3y + 9x = 46$. The correlation coefficient between x and y is :

- a. $-1/2$
- b. $-2/3$
- c. $-1/3$
- d. $1/2$

21. For a given set of bivariate data, the following results were obtained: AM of $X = 53$, AM of $Y = 28$, $b_{xy} = -0.2$. The most probable value of X when $Y = 20$ is:

- a. 53.6
- b. 52.6
- c. 55.6
- d. 54.6

22. On a correlation study of two variables x and y , the following values are obtained $b_{yx} = 1.12$, $r = 0.8$; SD of $x = 2.5$ Then the value of SD of y is:

- a. 2.40
- b. 3.05
- c. 3.50
- d. 2.04

23. Two regression lines coincide when

- a. $r = 0$
- b. $r = 2$
- c. $r = \pm 1$
- d. None

Answers : DD-71

Qs.	Answer	Qs.	Answer
1	A	13	B
2	A	14	D
3	D	15	A
4	D	16	C
5	C	17	B
6	C	18	D
7	D	19	A
8	B	20	A
9	D	21	D
10	D	22	C
11	D	23	C
12	B		

1. If $a^2 + b^2 = 45$ and $ab = 18$, then $(1/a) + (1/b) = ?$
a. $1/3$ b. $2/3$ c. $1/2$ d. None of these.
2. One third of a number is greater than one fourth of its successor by 1. Find the number.
a. 51 b. 21 c. 15 d. None of these
3. $[(0.7214 \times 20.37) / 69.80]^{1/3}$
a. 1.5948 b. 0.5949 c. 0.2348 d. None of these
4. Find the average of first 30 multiples of 5.
a. 77.50 b. 87.50 c. 75 d. None of these.
5. If a, b, c, d, e are 5 consecutive odd integers, then their average is
a. $a+5$ b. $abcde/5$ c. $5(a+b+c+d+e)$ d. $a+4$
6. A cricketer scored 180 runs in first test and 258 runs in second. How many runs he should score in third test so that his average score in three tests would be 230.
a. 219 b. 242 c. 252 d. 334
7. When a number is added to another number, the total becomes 150% of second number. What is the ratio between first and second number.
a. 1:2 b. 1:3 c. 2:3 d. None of these
8. Sum of two numbers is 14 and their difference is 10. Find the product of two numbers.
a. 24 b. 30 c. 36 d. None of these.
9. Find the number, when multiplied by 36 is increased by 1050.
a. 40 b. 30 c. 50 d. None of these
10. A number of men went to a hotel and each spent as many rupees as there were men. If the money spent was Rs. 15,625, find the no. of men.
a. 110 b. 125 c. 145 d. None of these.
11. Sum of two number is 75 and their difference is 20. Find the difference of their squares.
a. 1500 b. 1600 c. 1550 d. None of these
12. Difference between squares of two consecutive numbers is 37. Find the numbers.
a. 19,18 b. 20,19 c. 10,9 d. None of these
13. A number consisting of two digits is four times the sum of its digits and if 27 be added to it the digits are reversed. The number is:
a. 63 b. 35 c. 36 d. 60
14. If $3x+2y = 9$ and $x + 3y = 10$ then x and y are
a. 1,4 b. 2,1.50 c. 3,0 d. 1,3
15. Calculate the number such that it is equal to one-third of its difference from 56.
a. 32 b. 14 c. 42 d. None of these
16. What is the solution of the system of simultaneous linear equations
 $3x + 2y + 17 = 0$ & $5x - 6y - 9 = 0$;
a. $x = 3, y = 2$ b. $x = -3, y = 4$ c. $x = 3, y = -4$ d. $x = -3, y = -4$

17. Sheikh chili says is to his son, "Seven years ago I was seven times as old as you were, and three years later I shall be three times as old as you will be." Find the present age of Sheikh chili's son.
- a. 12 years b. 15 years c. 5 years d. 7 years
18. A number consist of three digits of which the middle one is zero and the sum of the other digits is 8. the number formed by interchanging the first and third digits is more than the original number by 396. Find the number
- a. 306 b. 206 c. 305 d. None
19. X and Y each have some money. If X given ₹ 30 to Y, then Y will have twice the money left with X. But if Y gives ₹ 10 to X, then X will have thrice as much as is left with Y. Then X and Y have respectively.
- a. ₹ 54, ₹ 62 b. ₹ 62, ₹ 34 c. ₹ 72, ₹ 44 d. ₹ 34, ₹ 62
20. The set of simultaneous equations $4x + 2y = 5$ and $6x + 3y = 10$ has :
- a. $x = 1, y = 2$ as solution
- b. $x = 0, y = 0$ and $x = 1, y = -2$ as solutions
- c. $x = 0, y = 0; x = -1, y = 2$ and $x = 1, y = -2$ as solutions
- d. An infinite number of solutions

Answers : DD-72

Qs.	Answer	Qs.	Answer
1	C	11	A
2	C	12	A
3	B	13	C
4	A	14	D
5	D	15	B
6	C	16	D
7	A	17	A
8	A	18	B
9	B	19	B
10	B	20	D

1. A two-digit number is such that the product of the digits is 8. When 18 is added to the number, the digits are reversed. Find the number
 a. 18 b. 24 c. 81 d. 42
2. If the slope of the line passing through the points (2,3) and (5,k) is $\frac{5}{3}$ then $k=?$
 a. 5 b. 6 c. 7 d. 8
3. If the points (-3,4) ,(-14,12) and (8,k) are collinear then $k=?$
 a. -3 b. -4 c. 4 d. 12
4. If a line makes equal intercepts on X and Y axes then the slope is
 a. -1 b. 0 c. -2 d. 1
5. The equation of the line joining the point (3,5) to the point of intersection of the lines $4x+y-1=0$ and $7x+3y-35=0$ is
 a. $2x-y=1$ b. $3x+2y=19$ c. $12x-y-31=0$ d. None of these
6. The point of intersection of the lines $3x+2y=6$ and $3x-y=12$ lies in quadrant
 a. 1 b. 2 c. 3 d. 4
7. The equation of the line having x-intercept = 4 and slope = -3 is
 a. $3x+y+2 = 0$ b. $3x+y=12$ c. $X+3y=12$ d. None of these
8. A line passes through the point (2,2) and it is perpendicular to the line $3x+y=3$. Its y-intercept is
 a. $\frac{1}{3}$ b. $\frac{2}{3}$ c. 1 d. $\frac{4}{3}$
9. Slope of the line passing through the points (1,1) and (100,100) is
 a. 1 b. 0 c. Not defined d. Can't say
10. $x^2-5x+6 = 0$, roots of this quadratic equation are
 a. 3,-2 b. -3,-2 c. 3,20 d. None of these
11. Find out the equation of the line passing through (3,6) (8,11)
 a. $y = 2x$ b. $x + 3 = y$ c. $y - 3 = x$ d. Both (B) and (C)
12. Y intercept of $3x + 7y = 350$ is
 a. 55 b. 50 c. $\frac{350}{3}$ d. None of these
13. If $x + 8y = 19$ and $2x + 11y = 28$ then x, y are
 a. 2,3 b. 3,2 c. 3,3 d. 2,2
14. I am three times old as my son. Five years later, I shall be 2.5 times as old as my son. How old am I?
 a. 35 years b. 15 years c. 20 years d. 45 years
15. Find x if $9x + 1 = 5x + 17$
 a. -4 b. 3 c. -3 d. None of these
16. $\frac{(12x+1)}{4} = \frac{(13x-1)}{5} + 3$ is true for
 a. $x = \frac{1}{8}$ b. $x = 2$ c. $x = \frac{5}{8}$ d. $x = \frac{51}{8}$
17. If equation of the line is $-y = -8x + 16$, its slope is
 a. 8 b. -8 c. 16 d. Can't Say

18. $2x + 5y = 25$, $5x - ky = 45$, has no solution if
a. $k = 12$ b. $k = 12\frac{1}{2}$ c. $k = 13$ d. None of these
19. The values of x and y satisfying the pair $(x/2)+(y/3)=2$, $x+2y=8$ are given by the pair.
a. 3,2 b. -2,-3 c. 2,3 d. None of these
20. Equations $kx+2y = 5$, $3x+y=1$ has unique solution if
a. $k = 6$ b. $k \neq 6$ c. $k = \pm 6$ d. None of these

Answers : DD-73

Qs.	Answer	Qs.	Answer
1	B	11	D
2	D	12	B
3	B	13	B
4	A	14	D
5	D	15	D
6	D	16	D
7	B	17	A
8	D	18	D
9	A	19	C
10	D	20	B

1. For what value of k , the equations $9x+4y = 9$ and $7x+ky = 5$ has no solution.
a. $28/9$ b. $36/7$ c. $23/9$ d. 7
2. A lady has only 25 paise and 50 paise coins in her purse. If in all she has 40 coins following ₹ 12.75. How many of each type does she have?
a. 18,23 b. 30,8 c. 29,11 d. None of these
3. A number consist of 2 digits is 7 times of sum of digits. When 27 is subtracted from the number, the digits are reversed, the number is
a. 63 b. 36 c. 56 d. None of these
4. A train travel a distance of 300 km at a constant speed. If speed of train is increased by 5 km/hr, the journey would have taken 2 hours less. The original speed of the train is
a. 25 km/hr b. 28 km/hr c. 27 km/hr d. None of these
5. The equation of the line passing through is (3,5) and (5,3) is
a. $x + y = 80$ b. $2x + 3y = 30$ c. $8x + 8y = 64$ d. $x - y = 2$
6. Slope of the line parallel to X- axis is
a. Zero b. Not defined c. 2 d. 3
7. Slope of the line perpendicular to to Y- axis is
a. Zero b. Not defined c. 2 d. 3
8. The equation of a line through (4, 5) and parallel to the line $2x - 3y - 5 = 0$ is
a. $2x + 3y + 7 = 0$ b. $2x - 3y = 7$ c. $2x - 3y + 7 = 0$ d. None of these
9. (2,8), (10,0), (-15,k) are collinear. Find 'k'
a. 10 b. 5 c. 25 d. -25
10. The sum of two digit number and number obtained by reversing the digits is 121, and digits differ by 3. The number is
a. 37 b. 47 c. 58 d. 69
11. By selling a car at a price of ₹ 72,000 a person made profit of 20% on cost. Find cost of the car?
a. ₹ 84,000 b. ₹ 72,000 c. ₹ 50,000 d. ₹ 60,000
12. Divide 78 in two parts such that their product is 1512.
a. 52,26 b. 62,16 c. 42,36 d. 72,6
13. The sum of three numbers in ascending order 15 and their product is 80. find the numbers
a. 2,5,8 b. 8,5,2 c. 1,4,7 d. None of these
14. If $b^2-4ac=25$ then the roots of the quadratic equation are -
a. Real, rational, Imaginary b. Real, rational, irrational
c. Real, rational. Equal d. Real, rational, distinct
15. The cubic equation $x^3 + 2x^2 - x - 2 = 0$ has 3 roots namely.
a. (1,-1, 2) b. (-1, 1,-2) c. (-1, 2,-2) d. (1, 2, 2)
16. If $b^2 > 4ac$ then roots are
a. Real, Unequal b. Imaginary c. Real, Complex d. Real, Unequal, even

17. Two numbers are such that their sum is 15 and difference is $(1/5)^{\text{th}}$ of their total. The numbers are
a. 12,3 b. 11,4 c. 9,6 d. 14,1
18. Two numbers are such that the sum is 19 and their product is 8 times the greater number , the numbers are
a. 12,7 b. 11,8 c. 13,6 d. 14,5
19. If the sum of 2 natural numbers is 9 and sum of their squares is 5 times their sum less 4. The numbers are
a. 2,7 b. 1,9 c. 3,6 d. 4,5
20. Difference of two numbers is 5 and difference of their squares is 45. The numbers are
a. 13,8 b. 12,7 c. 2,7 d. 14,9

Answers : DD-74

Qs.	Answer	Qs.	Answer
1	A	11	D
2	C	12	C
3	A	13	A
4	A	14	D
5	C	15	B
6	A	16	A
7	A	17	C
8	C	18	B
9	C	19	D
10	B	20	C

1. What is the slope and Y intercept of line $7x+5y=10$
a. $-3/5,9$ b. $9,-3/10$ c. $7/5,-10$ d. $-7/5,2$
2. If $x^3-25x^2-2000x=0$ then the roots of the equation are
a. $15,20,10$ b. $17,-19,5$ c. $10,19,-7$ d. None of these
3. If $x^3-2x^2-8x+16=0$ then the roots of the equation are
a. $1,-2,-3$ b. $2,5,-5$ c. $1,6,-7$ d. None of these
4. If points $(2,3),(3,2)$ and $(p,-19)$ are collinear then the value of p is
a. $120/5$ b. $24/5$ c. 244 d. $2/3$
5. The slope of the line perpendicular to the line $2x+5y-7=0$ is
a. $-2/5$ b. $5/2$ c. $1/3$ d. $2/5$
6. The slope of the line passing through $(2,4)$ and $(5,4)$ is
a. 0 b. Not defined c. Infinity d. Parallel to X-axis
7. If 1 is added to the denominator of a certain fraction it becomes $1/3$ and if 1 is subtracted from the denominator it becomes $1/2$ then the fraction is
a. $2/5$ b. $3/7$ c. $2/6$ d. $3/10$
8. The points $(3,-2), (p,1)$ and $(-5,4)$ are collinear then the value of p is
a. -3 b. $-2/5$ c. 3 d. -1
9. What is the slope of the line perpendicular to the line passing through the points $(1,2)$ and $(2,1)$
a. 1 b. -1 c. $1/2$ d. $-1/2$
10. The perimeter of rectangle is $82m$ and its area is $400 m^2$. calculate the breadth of rectangle
a. $25m$ b. $16m$ c. $9m$ d. $20m$
11. For what value of k, the equation $x^2+4kx+k+2=0$ has one of the root as 'zero'
a. 2 b. 4 c. -2 d. $-1/2$
12. The factors of the quadratic equation whose roots are $2m$ and $-7n$ are
a. $(x-2m)$ and $(x-7n)$ b. $(x+2m)$ and $(x-7n)$ c. $(x-2m)$ and $(x+7n)$ d. None of these
13. The sum of three consecutive positive even numbers is 15 less than three-fourth of 60. What is the middle number
a. 15 b. 10 c. 12 d. None of these
14. If p and q are roots of the quadratic equation $2x^2-5x+7=0$, then value of $(2p+2q)$ is
a. $5/2$ b. $-5/28$ c. 10 d. $10/2$
15. If $b^2 = 4ac$ in a quadratic equation then
a. Roots are imaginary b. Roots are equal
c. Roots are not equal d. Roots are reciprocals of each other
16. If one root of $5x^2 + 13x + p = 0$ be reciprocal of the other then the value of p is
a. 5 b. -5 c. $1/5$ d. $-1/5$
17. If the equation $x^2-(p+4)x+2p+5=0$ has equal roots, then p=?
a. ± 1 b. ± 2 c. 2 d. -2

18. If one root of the equation $x(x-6)=3k(1-x)$ is negative of other, Then value of k is
a. 1 b. 2 c. 3 d. None of these
19. $x, x-4, x+5$ are the factors of the left-hand side of the equation
a. $x^3+2x^2-x-2=0$ b. $x^3+x^2-20x=0$ c. $X^3-3x^2-4x+12=0$ d. None of these
20. Equation of a line perpendicular to $3x - 2y + 5 = 0$ and Passing through $(1, 0)$ is
a. a. $3x + 2y - 2 = 0$ b. $2x + 3y - 2 = 0$ c. $2x + 3y + 2 = 0$ d. None.

Answers : DD-75

Qs.	Answer	Qs.	Answer
1	D	11	C
2	D	12	C
3	D	13	B
4	A	14	D
5	B	15	B
6	A	16	A
7	A	17	B
8	D	18	B
9	A	19	B
10	B	20	B

1. If $4x^3+8x^2-x-2=0$ then $2x+3=?$
 a. 4,-1,2 b. -4,2,1 c. 2,-4,-1 d. None of these
2. The distance between the points A(a,2) and B(3,a) is 5 units, Then a=?
 a. 1 or 4 b. -2 or 3 c. -1 or 6 d. None of these
3. If the Total cost of producing 1000 units is ₹ 100,000 and total cost of producing 1100 units is ₹ 1,02,000. Find the Fixed Cost -
 a. ₹ 88,000 b. ₹ 80,000 c. ₹ 80,800 d. ₹ 20,000
4. If a and b are roots of $3x^2-5x+6=0$ then the value of a^2+b^2 is
 a. 25/9 b. -4/9 c. -11/9 d. 11/9
5. What is the slope of the line passing through (8,9) and (9,10)
 a. -1 b. 1 c. ±1 d. None of these
6. Two numbers are such that their difference is 24 and product is 180. The numbers are
 a. 30,6 b. 4,30 c. 15,39 d. 1,25
7. The slope of the line parallel to $3x+6y=5$ is
 a. 3/6 b. -1/2 c. ±3/6 d. None of these
8. The equation of the line passing through (2,3) and perpendicular to $2x+9y=789$ is
 a. $9x-2y=120$ b. $2x+9y=12$ c. $2x+9y=31$ d. None of these
9. The equation of the line having slope of -5 and passing through the point (8,8) is
 a. $5x+y=84$ b. $5x+y=48$ c. $5x-y=32$ d. None of these
10. If the points (2,-2),(-2,2) and (7,P) are collinear find P
 a. P=-7 b. P= 7 c. P= 9 d. P=11
11. The equation of the line passing through (8,8) and parallel to $3x-y=0$ is
 a. $3x-y=88$ b. $x-3y=-16$ c. $3x-y+16=0$ d. None of these
12. If the total cost of 10 machines is ₹ 15,000 and 20 machines is ₹ 20,000. Find the total cost of 30 machines.
 a. ₹ 25,000 b. ₹ 30,000 c. ₹ 35,000 d. ₹ 40,000
13. Find the product of slopes of following lines - 1) $3x+8y=90$ 2) $8x+3y=90$
 a. 1 b. -1 c. 9/64 d. None of these
14. Find the product of slopes of following lines - 1) $8x+3y=90$ 2) $8x-3y=890$
 a. 1 b. -1 c. 9/64 d. None of these
15. A linear equation has
 a. No root b. Only one root c. Infinite no. of roots d. Equal roots
16. Roots of the Quadratic equation are imaginary when
 a. $b^2 = 4ac$ b. $b^2 > 4ac$ c. $b^2 < 4ac$ d. $b^2 \neq 4ac$
17. If a, b are the roots of $x^2 - 3x + 2 = 0$ then the equation whose roots are (a + 1) and (b + 1) is
 a. $x^2 + 5x + 6 = 0$ b. $x^2 - 5x - 6 = 0$ c. $x^2 + 5x - 6 = 0$ d. $x^2 - 5x + 6 = 0$

18. If p and q are roots of Quadratic equation $3x^2+6x+9 = 0$ then the value of p^2+q^2+2pq is
a. -4 b. 4 c. Can't find from given data d. 9
19. Find the Quadratic equation whose roots are 5 and -5
a. $x^2+10x+25 = 0$ b. $x^2-10x+25 = 0$ c. $x^2-5 = 0$ d. $x^2-25 = 0$
20. If the roots of the equation $x^2 - px + 8p - 15 = 0$ are equal then p is equal to
a. a. 3 or 5 b. 2 or 5 c. 3 or 5 d. 2 or 30.

Answers : DD-76

Qs.	Answer	Qs.	Answer
1	A	11	D
2	C	12	A
3	B	13	A
4	C	14	D
5	B	15	B
6	A	16	C
7	B	17	D
8	D	18	B
9	B	19	D
10	A	20	D

13. A man purchased 56 stamps of 50 paise and 1 rupee. The total amount he spent was Rs. 55.50. What is the number of 50 paise and 1 rupee stamps purchased.
- a. 38 and 18 respectively b. 46 and 10 respectively
c. 27 and 29 respectively d. None
14. Suppose α , β are the roots of the equation $2x^2 - 5x + 7 = 0$, then the equation whose roots are $(2\alpha + 3\beta)$ and $(3\alpha + 2\beta)$ is :
- a. $2x^2 + 25x + 82 = 0$ b. $2x^2 - 25x - 82 = 0$
c. $2x^2 - 25x + 82 = 0$ d. $2x^2 + 25x - 82 = 0$
15. A person divides his journey 3 equal parts and decides to travel on 3 parts at the speeds of 40,30,15 km/hr respectively. Find the average speed of whole journey.
- a. 30 km/hr b. 24 km/hr c. 35 km/hr d. None of these
16. If Raja can walk a certain distance in days when he rest 9 hours each day,. How long will it take him to walk twice as far if he walk twice as fast and rest twice as long each day?
- a. 125 days b. 25 days c. 50 days d. 100 days
17. The sum of two numbers is 15 and their product is 50. sum of their reciprocals is
- a. 0.25 b. 0.30 c. 0.20 d. 0.40
18. If $x^3 - 25x^2 - 50x + 3000 = 0$ then the roots of the equation are
- a. 15,20,10 b. 17,-19,5 c. 10,19,-7 d. None of these
19. If $x = 2$ is solution of $x^2 + kx + 4 = 0$, then value of K is
- a. 2 b. -2 c. 4 d. -4
20. $X^4 + 9x^2 + 25$ can be factorize as
- a. $(X^2 + x + 5)(X^2 - x + 5)$ b. $(X^2 + x - 5)(X^2 - x - 5)$
c. $(X^2 + x + 5)(X^2 - x - 5)$ d. None of these

Answers : DD-77

Qs.	Answer	Qs.	Answer
1	C	11	C
2	A	12	B
3	C	13	D
4	D	14	C
5	D	15	B
6	B	16	A
7	D	17	B
8	A	18	D
9	A	19	D
10	A	20	A

1. If α & β are the roots of the $x^2 - px + q = 0$ then $(\alpha^2 + \beta^2)$ is,
 - a. $p^2 + 2q$
 - b. $p^2 - 2q$
 - c. $p(p^2 - 3q)$
 - d. $p^2 - 4q$
2. If α & β are the roots of the $x^2 - 6x + 6 = 0$ then value of $(\alpha^2 + \beta^2)$ is,
 - a. 36
 - b. 24
 - c. 12
 - d. 6
3. A ball rolling up an incline covers 36 metres during the first second, 32 metres during the second, 28 metres during the next and so on. How much distance will it travel during the 8th second?
 - a. 8 metres
 - b. 6 metres
 - c. 7 metres
 - d. 9 metres
4. If $\sqrt{x-7} + \sqrt{x-3} = 2$ then what is the value of x
 - a. 9
 - b. 7
 - c. 19
 - d. 3
5. What is the sum of the roots of the equation $2x^2 - 11x + 5 = 0$?
 - a. $11/2$
 - b. $-11/2$
 - c. $2/11$
 - d. 10
6. If one root of the equation $ax^2 - bx + c = 0$ is reciprocal of the other, then
 - a. $a = b$
 - b. $b = c$
 - c. $a = c$
 - d. $a = -c$
7. If the sum of two numbers is 15 and their product is 60, what is the sum of their reciprocals?
 - a. $2/5$
 - b. $1/4$
 - c. $1/5$
 - d. $1/15$
8. The roots of the equation $x(x + 1) = 6$ are
 - a. 1,6
 - b. -3,-2
 - c. 2,-3
 - d. 1,-6
9. If the roots of the equation $px^2 + qx + 3 = 0$ are reciprocals to each other then,
 - a. $q=3$
 - b. $p=3$
 - c. $p-q=0$
 - d. $p+q=0$
10. The roots of the equation $x^2 + 6x - 5 = 0$ are
 - a. Real and equal
 - b. Imaginary
 - c. Real and unequal
 - d. Rational and equal
11. If the sum of two positive numbers is 5 and the sum of their squares is 17, what is the product of the numbers?
 - a. 22
 - b. 8
 - c. 4
 - d. 12
12. If out of three numbers, the sum of first and second is 24, sum of second and third is 30 and sum first and third is 26, the smallest number is:
 - (a) 18
 - b. 14
 - c. 16
 - d. 10
13. The difference between the ages of two men is 10 years. 15 years ago, the age of the older was twice the age of younger. What are their present ages?
 - a. 10,15
 - b. 35,40
 - c. 25,35
 - d. 15,25
14. In a number of three digits, if the extreme digits are inter-changed, there is no difference in the number. The sum of all the three digits is 17 and the difference of first two digits be 4, what is the number?
 - a. 737
 - b. 535
 - c. 636
 - d. None of these
15. `630 were distribution among A, B and C, so that the shares of A and B were as 2 : 3 and the shares of B and C were as 4:5. What is the shares of C?
 - a. `270
 - b. `144
 - c. `216
 - d. None of these
16. The system of equations $2x + Ky = 11$ and $5x - 7y = 5$ has no solution if the value of K is
 - a. $13/5$
 - b. $-13/5$
 - c. $-14/5$
 - d. $-16/5$

17. If $2x + y = 5$ and $3x - 4y = 2$, then the value of $2xy$ is
a. 4 b. 6 c. 8 d. 10
18. If the cost of 3 chairs and 1 table is ₹ 900 and that of 5 chairs and 3 tables is ₹ 2100, then the cost of 4 chairs and one table is
a. ₹ 1000 b. ₹ 1050 c. ₹ 1100 d. ₹ 1150
19. The sum of two numbers is 80. If three times one number is equal to five times the other number, then the numbers are
a. 20,60 b. 50,30 c. 10,70 d. 25,55
20. The value of the expression $5x^2 + 6x + 7$ for $x=1$ is
a. 17 b. 1 c. 18 d. 19

Answers : DD-78

Qs.	Answer	Qs.	Answer
1	B	11	C
2	B	12	D
3	A	13	C
4	B	14	A
5	A	15	A
6	C	16	C
7	B	17	A
8	C	18	B
9	B	19	B
10	C	20	C

1. Neeraj bought 14 chairs at ₹ 150 each, 15 chair at ₹ 140 each. The average price of a chair to the nearest rupee is equal to:
a. ₹ 149 b. ₹ 195 c. ₹ 165 d. None of these
2. A man 1.4 m tall casts a shadow 1.2 m long at the time when a building, casts a shadow 5.4 m long. Calculate the height of the building :
a. 6.3 m b. 3.21 m c. 4.3 m d. 5.6 m
3. An automobile driver travels to a hill station at an average speed of 30 km/hr. He makes return trip at an average speed of 20 km/hr. What is the average speed of the entire distance(200km)
a. 30 b. 20 c. 25 d. 24
4. The cost of 7 kg sugar and 5 kg rice is ₹ 234, and the cost of 6 kg sugar and 7 kg of rice is ₹ 263. Find the cost of sugar and rice per kg.
a. ₹ 17, ₹ 23.80 b. ₹ 17.50, ₹ 23.50 c. ₹ 18, ₹ 24 d. None of these
5. ₹ 600 were divided equally among a certain number of poor children. Had there been 5 less children, each would have got ₹ 4 more. Find the original number of children
a. 28 b. 30 c. 32 d. 24
6. The age of the person is twice the sum of ages of their two sons and five years ago his age was three times of sum of ages of his sons, his present age is
a. 60 years b. 52 years c. 51 years d. 50 years
7. A man has only 20 paise coins and 25 paise coins in his purse. If he has 50 coins in all totaling ₹ 11.25, how many coins of each does he have
a. 15, 35 b. 25, 25 c. 40, 10 d. 30, 20
8. Find x if $x/(x-2) = 3$
a. 6 b. 4 c. 3 d. 8
9. What is that number of which fifth part exceeds fifteenth part by 8?
a. 60 b. 50 c. 55 d. 65
10. Calculate the value of k for which the equations $2x+3y=5$ and $4x+ky=100$ has infinite number of solutions, is
a. 2 b. 3 c. 6 d. 0
11. One half of one ninth of three eighteenth of a number is 22.50 , the number is
a. 2420 b. 2430 c. 2440 d. None of these
12. The equation of the line passing through (5,5) and (0,5) is
a. $2x+3y-5 = 0$ b. $3x+8y+15 = 0$ c. $x+y = 5$ d. None of these
13. Seven person gambled sitting on a table. Four persons lost on an average ₹ 55, whereas the other three gained on an average ₹ 70. Is the information worth believing?
a. Yes b. No c. Not certain d. None of these.
14. A number consists of two digits. The digits in the ten's place is 3 times the digit in the unit's place. If 54 is subtracted from the number the digits are reversed. The number is:
a. 62 b. 31 c. 93 d. None of these
15. The number of even positive integers that can have three digits is equal to
a. 550 b. 540 c. 400 d. 450

16. A person covers 12 km at 3 km/hr , 18 km at 9 km/hr and 24 km at 4 km/hr. Find the Average Speed in covering the whole distance

- a. 4.5 km / hr b. 5 km / hr c. 10 km / hr d. None of these

17. The difference between a 2 digit number and the number obtained by interchanging the digit is 54. What is the difference of 2 digits of the number.

- a. 4 b. 3 c. 6 d. None of these

18. If the sum of number and its square is 182, what is the number?

- a. 13 b. 14 c. 15 d. none of these

19. A bag contains one rupee ,50 paise and 25 paise coins in the ratio 10:14:18.If the total amount in the bag is ₹ 430 ,find the number of coins of each kind

- a. 200,280,360 b. 280,300,360 c. 360,280,200 d. None of these

20. Father is six times as old as his son .Four years hence he will be four times as old as his son. Then the present ages are

- 42,8 b. 36,6 c. 40,10 d. None of these

Answers : DD-79

Qs.	Answer	Qs.	Answer
1	D	11	B
2	A	12	D
3	D	13	B
4	D	14	C
5	B	15	D
6	D	16	A
7	B	17	C
8	C	18	A
9	A	19	A
10	C	20	B

1. If $x^2 + 6x = -9$ then the roots of the equation are
 a. -3,-3 b. -3,3 c. 2,4 d. None of these
2. If one root of equation $X^2-7X+M=0$, exceeds the other by one then value of M is equal to
 a. 9 b. 10 c. 12 d. 18
3. What is the slope of the line passing through (5,3) and (3,6)
 a. $3/2$ b. $-3/2$ c. 2 d. -2
4. What is the slope and y intercept of the line $3x+5y=9$
 a. $-3/5, 9/5$ b. $9, -3/5$ c. $3/5, -9$ d. $-3/5, -9$
5. If $x^3+3x^2-2x+6=0$ then roots of the equation are
 a. 2,-2,-1 b. -1,2,-3 c. 1,3,-5 d. None
6. Find a number from which if you subtract 40, the difference will be one-third of the original number?
 a. 50 b. 80 c. 60 d. 46
7. A man 50 years old has 8 sons born at equal intervals. The sum of the ages of the father and the eight sons is known to be 186 years. Calculate the age of the eldest son, if the youngest one be 3 years old.
 a. 21 years b. 20 years c. 31 years d. 25 years
8. If twice the son's age in years is added to the father's age, the sum is 70. But if twice the father's age is added to the son's age, the sum is 95. The ages of father and son in years are:
 a. (40, 15) b. (15, 30) c. (25, 30) d. None of these.
9. A mother to said her daughter, "I am 8 times as old as you were when I was as old as you are." Find out their present ages if the sum of their age is 75 years.
 a. 47 & 28 b. 42 & 33 c. 48 & 27 d. 46 & 26
10. Present the following situation in terms of linear inequalities A dealer wishes to purchase a number of Table fans and Cooler. He has only ₹ 57600 to invest and has space for at most 20 items. A Cooler cost him ₹ 3600 and table fan ₹ 2400.
 a. $x+y \leq 30, 3600x + 2400y \leq 57600$ b. $x+y \leq 20, 3600x + 2400y \leq 57600$
 c. $x+y \leq 30, 360x + 240y = 57600$ d. None of these
11. The equation of a straight line parallel to x-axis and passing through the point (- 2, - 3) is:
 a. $y - 3 = 0$ b. $y + 3 = 0$ c. $y - 4 = 0$ d. $y + 1 = 0$
12. A diet for a sick person must contain at least 4000 units of vitamins, 50 units of minerals and 400 calories. Two foods F1 and P2 are available. One unit of food F1 contains 200 units of vitamins, 1 unit of mineral and 40 calories. Also one unit of food P2 contains 100 units 'of vitamins, 2 units of minerals and 40 calories. If x and y units of food F1 and F2 are taken, then the linear inequalities are
 a. $200x+100y, \leq 4000, x+2y \leq 50, 40x+40y \leq 400, x \geq 0, y \geq 0$
 b. $200x+ 100y \geq 4000, x+2y \geq 50, 40x+40y \geq 400, x \geq 0, y \geq 0$
 c. $200x+100y \leq 4000, x+2y \geq 50, 40x+40y \leq 400, x \geq 0, y \geq 0$
 d. $200x + 100y \leq 4000, x+2y \leq 50, 40x+40y \leq 400$
13. If a and b roots of the equation $X^2 + 2x+1 = 0$, then the equation whose roots are (1/a) and (1/b) is
 a. $x^2 + \frac{1}{2}x + \frac{1}{2} = 0$ b. $x^2 + x + \frac{1}{2} = 0$
 c. $\frac{1}{2}x^2 + \frac{1}{2}x + 1 = 0$ d. None of these

14. If the sum of the roots of the equation $qx^2 + 2x + 3q = 0$, is equal to their product, then the value of q is equal to

- a. $-\frac{2}{3}$ b. $\frac{2}{3}$ c. 3 d. -6

15. The equation of the line passing through $(5, -3)$ and perpendicular to the line $2x - 3y + 14 = 0$ is:

- a. $3x + 2y - 9 = 0$ b. $3x + 2y + 14 = 0$
c. $2x - 3y - 9 = 0$ d. $2x - 3y - 14 = 0$.

16. If $x = m$ is one of the solutions of the equation $2x^2 - 5x - 3 = 0$ the possible values of m are

- a. $(0, 2)$ b. $(0, -2)$ c. $(0, 1)$ d. $(3, -1/2)$.

17. Slope of the line passing through the points $(1, 1)$ and $(1, 0)$ is

- a. 1 b. 0 c. Not defined d. Can't say

18. Factors of quadratic equation $x^2 - x - 6 = 0$ are

- a. -3 and 2 b. -2 and 3 c. $(x+2)(x-3)$ d. $(x-2)(x+3)$

19. The sum of two numbers, one of which is $\frac{2}{3}$ times of other, is 50. Find two numbers

- a. 50, 30 b. 20, 30 c. 15, 35 d. 10, 40

20. Divide 300 in two parts so that half of one part be less than the other by 48

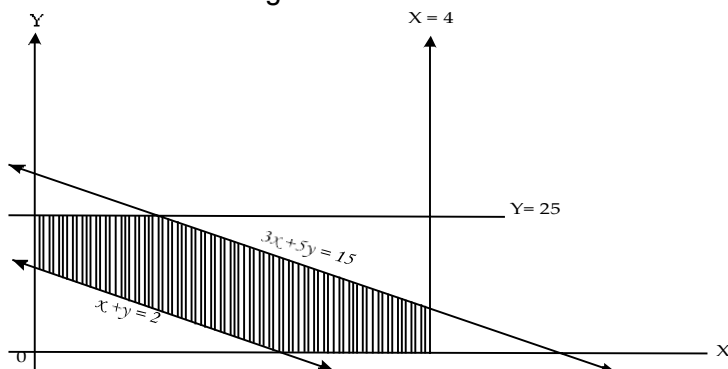
- a. 168, 132 b. 150, 150 c. 140, 160 d. 172, 128

Answers : DD-80

Qs.	Answer	Qs.	Answer
1	A	11	B
2	C	12	B
3	B	13	D
4	A	14	A
5	D	15	A
6	C	16	D
7	C	17	C
8	A	18	C
9	C	19	B
10	B	20	A

1. The line $x=25$ will be parallel to
 - a. X-axis
 - b. Y-axis
 - c. Both
 - d. None of these
2. The slope of the line $2x - 57y = 114$ is
 - a. $4/114$
 - b. $-2/57$
 - c. $2/114$
 - d. None of these
3. Point $(2, -1/2)$ lie in
 - a. 1st quadrant
 - b. 3rd quadrant
 - c. 4th quadrant
 - d. 2nd quadrant
4. The lines $x+y = 0$, $x-y = 0$ will intersect at
 - a. $(0,0)$
 - b. Somewhere on X-axis
 - c. Somewhere on Y-axis
 - d. Can't say
5. Slope of a line is zero. That line is
 - a. Parallel to X-axis
 - b. Perpendicular to Y-axis
 - c. Both (A) and (B)
 - d. None of these
6. The equation of the line passing through $(0,8), (9,0)$ is
 - a. $8x+9y = 1$
 - b. $9x+8y = 72$
 - c. $8x+9y = 72$
 - d. None of these
7. The equation of the line passing through $(8,0), (16,0)$ is
 - a. $8x+16y = 1$
 - b. $16x+8y = 128$
 - c. $y = 0$
 - d. None of these
8. $a^3+b^3 =$
 - a. $(a^2+ab+b^2)(a+b)$
 - b. $(a^2+ab+b^2)(a-b)$
 - c. $(a^2-ab+b^2)(a+b)$
 - d. None of these
9. Find the slope of perpendicular line of $2x+78y=1234$
 - a. $1234 / 78$
 - b. $78 / 2$
 - c. $-78 / 2$
 - d. None of these
10. Find the slope of parallel line of $2x+78y=1234$
 - a. $1234 / 78$
 - b. $2 / 78$
 - c. $-78 / 2$
 - d. None of these
11. Find two consecutive positive even integers whose sum is 94.
 - a. 46,48
 - b. 49,45
 - c. 54,40
 - d. None of these
12. A number consist of two digits of which ten's digit exceeds the unit digit by 6. The number itself is equal to 10 times the sum of digits. The number is:
 - a. 60
 - b. 93
 - c. 71
 - d. None of these

13. For the following shaded area the linear constraints



- a. $x + y \leq 2$, $3x + 5y \leq 15$, $x \leq 4$, $y \leq 25$
- b. $x + y \geq 2$, $3x + 5y \leq 15$, $x \leq 4$, $y \leq 25$, $x \geq 0$, $y \geq 0$
- c. $x + y \geq 2$, $3x + 5y \leq 15$, $x \leq 4$, $y \leq 25$, $x = 0$, $y = 0$
- d. $x + y \leq 2$, $3x + 5y \geq 15$, $x \leq 4$, $y \leq 25$

Answers : DD-81

Qs.	Answer	Qs.	Answer
1	B	11	A
2	A	12	A
3	C	13	B
4	A		
5	C		
6	C		
7	C		
8	C		
9	B		
10	D		

1. First, Second and last term of a finite A.P are m , n and $2m$ respectively, then the sum of the series is
 a. $3mn / 2(n-m)$ b. $3mn / (n-m)$ c. $3mn / 2(n+m)$ d. None of these
2. The first and fifth term of an A.P of 40 terms are -29 & -15 respectively. Find the sum of all positive terms of this A.P
 a. 1605 b. 1705 c. 1805 d. None of these
3. If m^{th} term of A.P is $1/n$ and n^{th} term is $1/m$, then the sum of mn term is
 a. $mn + 1$ b. $\frac{1}{2}(mn-1)$ c. $\frac{1}{2}(mn+1)$ d. None of these
4. 10^{th} term of AP is 12 and 12^{th} term is 10. Find 22^{nd} term of that AP
 a. 22 b. 12 c. Zero d. None of these
5. If one Arithmetic Mean A and G.M.s G_1, G_2 be inserted between any two numbers, then $G_1^3 + G_2^3$ is equal to -
 a. $2G_1G_2$ b. $2AG_1G_2$ c. $2AG_1$ d. None of these
6. If $(P+1)^{\text{th}}$ term of A.P. is twice the $(Q+1)^{\text{th}}$ term; then the ratio of $(P+Q+1)^{\text{th}}$ term and $(3P+1)^{\text{th}}$ term is :
 a. 1:2 b. 2:1 c. 1:3 d. None of these
7. If m times of the m^{th} term of A.P. is equal to n times of the n^{th} term, then its $(m+n)^{\text{th}}$ term is :
 a. 1 b. -1 c. 0 d. None of these.
8. If a, b, c are in G.P., a, x, b and b, y, c are both in A.P., then $a/x + c/y$ is equal to :
 a. 1 b. 0 c. 2 d. None of these.
9. The Arithmetic Mean between two numbers is 15 and their G.M is 9; then the numbers are
 a. 27,3 b. 9,9 c. 16,9 d. None of these
10. The product of n G.M.s between the two given numbers is equal to the n power of the single G.M. between them. This statement is -
 a. True b. False c. Can't say d. None of these
11. In AP terms of sequence are increased or decreased by fixed number
 a. True b. Partly true c. False d. None
12. Three numbers a, b, c , are in AP if and only if $b-a=c-b$ i.e. if and only if $a+c=2b$
 a. True b. Partly true c. False d. None
13. In a GP any term may be obtained by multiplying the preceding term by common ratio of GP
 a. True b. Partly true c. False d. none
14. If ' a ' is the first term and ' r ' the common ratio of finite GP consisting of m terms then n^{th} term from the end is given by $a.r^{m-n}$
 a. True b. Partly true c. False d. None
15. Three numbers a, b, c are in GP if and only if $b/a=c/b$ i.e. and if $b^2=ac$
 a. Partly True b. True c. False d. None
16. Determine 25^{th} term of AP whose 9^{th} term is -6 and common difference is $5/4$
 a. 16 b. 18 c. 12 d. 14
17. Which term of AP 5,13,21..... is 181
 a. 21^{st} b. 22^{nd} c. 23^{rd} d. 24^{th}

18. Determine k so that $k+2$, $4k-6$ and $3k-2$ are three consecutive terms of an AP

- a. 5 b. 7 c. 9 d. 3

19. The ratio of the 7th to 3rd term of AP is 12:5. Find the ratio of 13th to 4th term

- a. 8:5 b. 9:4 c. 7:3 d. 10:3

20. If 7 times 7th term of an AP is equal to 11 times its 11th term then 18th term of AP is

- a. 1 b. 2 c. 0 d. 3

Answers : DD-82

Qs.	Answer	Qs.	Answer
1	A	11	A
2	B	12	A
3	C	13	A
4	C	14	A
5	B	15	B
6	A	16	D
7	C	17	C
8	C	18	D
9	A	19	D
10	A	20	C

1. The 4th term of an AP is equal to 3 times the first term and 7th term exceeds twice the third term by 1. Find the first term
a. 3 b. 5 c. 7 d. 9
2. If third and the 13th terms of A.P. are -40 and 0 then 20th term is
a. 25 b. 20 c. 28 d. 23
3. Determine the sum of first 35 terms of AP if $t_2=2$ and $t_7=22$
a. 2510 b. 2310 c. 2710 d. 2910
4. If the 5th and 12th term of an AP are 30 and 65 respectively. Find S_{20}
a. 1175 b. 1250 c. 1150 d. 1350
5. If The sum of n terms of an A.P. is $3n^2 - n$. The 10th term of A.P. is
a. 50 b. 54 c. 56 d. 6
6. The sum of a series in AP is 525. Its 1st term is 3 and last term is 39. Find the common difference
a. $\frac{3}{2}$ b. $\frac{3}{3}$ c. $\frac{2}{3}$ d. $\frac{1}{3}$
7. Find common difference of an AP whose first term is 100 and sum of whose first 6 terms is five times the sum of next 6 terms
a. -10 b. -15 c. -20 d. -5
8. Sum of the series $51+50+49+\dots+21$ is
a. 1116 b. 1112 c. 1128 d. 1124
9. The nth term of the series 3, $\frac{3}{3}$, $\frac{1}{3}$,.....is $\frac{1}{243}$ then n is
a. 12 b. 13 c. 14 d.15
10. The sum of a certain number of terms of an AP series - 8, - 6, - 4..... is 52. The number of terms is
a. 12 b. 13 c. 11 d. None of these
11. The first three terms of sequence when S_n is $n^2 - 2n$ are
a. -1, 0, 3 b. 1, 0, 2 c. -1, 0, -3 d. None of these
12. The last term of the A.P. 0.6, 1.2, 1.8, To 13 terms is
a. 7.7 b. 8.7 c. 7.8 d. None of these
13. If the sum of first 20 terms is equal to the sum of first 15 terms of an AP., then the sum of first 35 terms is equal to: .
a. -35 b. 70 c. 15 d. None of these
14. The sides of a right-angled triangle are in A.P. The ratio of sides is :
a. 3 : 5 : 8 b. 2 : 3 : 4 c. 3 : 4 : 5 d. 5 : 8 : 3
15. Which term of the G.P. 5, 10, 20, 40,..... is 1280?
a. 11th b. 9th c. 8th d. 12th
16. If a, G, b are in G.P., then:
a. $2G = ab$ b. $G^2 = ab$ c. $G = \frac{1}{2} ab$ d. $G = \frac{1}{2} (a + b)$
17. In a G.P., the sum of first n terms is 4095, common ratio is 2 and the last term is 2048. Find n.
a. 10 b. 11 c. 12 d. 15

18. The last term of the series 1,2, 4,..... to 10 terms is
a. 512 b. 256 c. 1024 d. None of these
19. Find the sum of all odd numbers of four digits which are divisible by 9
a. 25,56,000 b. 45,54,000 c. 27,54,000 d. None of these
20. The 6th term from end of G.P. 8,4,2,1,....., 1/1024 is
a. 1/64 b. 32 c. 1/32 d. None of these

Answers : DD-83

Qs.	Answer	Qs.	Answer
1	A	11	D
2	C	12	C
3	B	13	D
4	C	14	C
5	C	15	B
6	A	16	B
7	A	17	C
8	A	18	A
9	B	19	C
10	B	20	C

1. If 1, ab, 9 are in GP then the value of ab is
a. 3 b. -3 c. A or B d. None of these
2. If sum of p terms of AP is the same as sum of q terms. What is sum of (p+q) terms of AP?
a. Can't find b. $(p+q)/2$ c. 1 d. 0
3. There are 60 terms in A.P. of which first term is 8 and the last term 185 then 31st term is
a. 95 b. 98 c. 93 d. None of these
4. Then nth term of G.P. $\frac{-5}{2}, \frac{5}{4}, \frac{-5}{8}, \dots$ is $\frac{5}{1024}$ then the value of n is
a. 11 b. 10 c. 9 d. 4
5. mth term of AP is n and nth term is m then rth term is
a. $m+n+r$ b. $n+m-2r$ c. $(m+n+r)/2$ d. $m+n-r$
6. $10+9\frac{2}{3} + 9\frac{1}{3} + 9 + \dots$ till n terms = 155. Find n.
a. 30 b. 31 c. Both d. None
7. 4 arithmetic means between -2 and 23 are
a. 3, 13, 8, 18 b. 18, 3, 8, 13 c. 3, 8, 13, 18 d. None
8. Sum of series $3\frac{1}{2} + 7 + 10\frac{1}{2} + 14 + \dots$ 17 terms is
a. 530 b. 535 c. 535.50 d. None
9. t_{12} of series -128, 64, -32 is
a. -1/16 b. 16 c. 1/16 d. None
10. Sum of first 20 terms of GP is 244 times of sum of first 10 terms. The common ratio is
a. $\pm\sqrt{3}$ b. ± 3 c. $2\sqrt{3}$ d. None
11. 8, 4, 2, 1, \dots $S_{\infty} = ?$
a. 8 b. 24 c. 16 d. None
12. Sum of infinite terms of GP 1, 2/3, 4/9 is
a. 1/3 b. 3 c. 2/3 d. None
13. $t_4 = x, t_{10} = y, t_{16} = z$, then
a. $x^2 = yz$ b. $z^2 = xy$ c. $y^2 = zx$ d. None
14. Sum of all natural numbers between 500 and 1000 which are divisible by 13 is
a. 28,405 b. 24,805 c. 28,540 d. None.
15. If unity is added to sum of any number of terms of the 3, 5, 7, 9 then resulting sum is
a. Perfect square b. Perfect cube c. Odd number d. None
16. If AM, GM of 2 numbers is 10, 5 respectively, then HM is
a. 2.50 b. 25 c. 50 d. None
17. 4 Geometric means between 4 and 972 are
a. 12, 36, 108, 324 b. 12, 24, 108, 320 c. 10, 36, 108, 320 d. None
18. The next term of the sequence 2, 6, 12, 20, ... is
a. 30 b. 24 c. 40 d. 28

19. Three numbers in G.P. whose sum is 35 and product is 1000 are

- a. 5,10,20 b. 10,15,20 c. 5,8,25 d. 10,20,30

20. The sum of the series $0.4 + 0.004 + 0.00004 + \dots \infty$ is

- a. 0.00000004 b. 0.96 c. ∞ d. None of these

Answers : DD-84

Qs.	Answer	Qs.	Answer
1	C	11	C
2	D	12	B
3	B	13	C
4	B	14	A
5	D	15	A
6	C	16	A
7	C	17	A
8	C	18	A
9	C	19	A
10	A	20	D

1. The sum of the series $72+70+68+\dots+40$ is
a. 852 b. 952 c. 720 d. 360
2. The sum of n terms of an A.P. is $3n^2 + 5n$. Find the number of the term which is equal to 152
a. 25 b. 20 c. 15 d. 30
3. Three integers in A.P. whose sum is 15 and product is 80 are
a. 2, 5, 8 b. 3, 6, 9 c. 2, 4, 10 d. 10, 2, 4
4. The sum of 10 terms of the series $2 + 6 + 18 + \dots$ is
a. $121(6+2)$ b. $243(3+1)$ c. $(121)/(\sqrt{3}-1)$ d. $242(\sqrt{3}-1)$
5. Which term of the progression $-1, -3, -5, \dots$ is -39
a. 21st b. 20th c. 19th d. None of these
6. The three geometric means between 1 and 256 are
a. 1, 16, 64 b. 8, 16, 64 c. 4, 16, 64 d. 1, 4, 16
7. Find $1+2+3+4+5+\dots+105$
a. 5000 b. 5560 c. 5565 d. None of these
8. If the 9th term of AP is 99 and 99th term is 9 find 108th term
a. 0 b. 2 c. 4 d. 6
9. If 12th term of AP is -13 and sum of first 4 terms is 24 what is the sum of first 10 terms
a. 0 b. 2 c. 1 d. 4
10. The sum of n terms of an AP is $3n^2+4n$ then find n th term
a. $5n+2$ b. $6n+1$ c. $8n+3$ d. $7n+3$
11. How many terms of AP $1, 4, 7, \dots$ are needed to give the sum 715?
a. 33 b. 22 c. 24 d. 27
12. The first and last term of AP are -4 and 146 and sum of AP is 7171. Find the number of terms in AP and common difference
a. $101, 3/2$ b. $101, 2$ c. $100, 3/2$ d. None of these
13. Sum of three numbers in G.P. be 14. If one is added to first and second and 1 is subtracted from the third the new numbers are in A.P. The smallest of them is
a. 2 b. 4 c. 6 d. 8
14. The sum of squares of first twenty natural numbers is equal to
a. 2,570 b. 2,670 c. 2,770 d. 2,870.
15. Which term of the A.P. $64, 60, 56, 52, \dots$ is zero?
a. 18th b. 17th c. 14th d. 15th
16. The n th term of an A.P. is $(3n + 5)$. Its 7th term is
a. 26 b. $(3n - 2)$ c. $3n + 12$ d. $3n + 2$.
17. The sum of all 2 digit numbers is
a. 4,955 b. 4,890 c. 3,776 d. None of these

18. How many terms of the A.P. 3, 6, 9, 12, 15, _____ must be taken to make the sum 108?
a. 9 b. 7 c. 8 d. 36
19. The sum of first 60 natural even numbers is
a. 1,830 b. 1,640 c. 3,666 d. None of these
20. What is the sum of all those terms between 100 and 800 each of which on division by 16 leaves a remainder 7
a. 19,768 b. 20,658 c. 19,568 d. 19,668

Answers : DD-85

Qs.	Answer	Qs.	Answer
1	B	11	B
2	A	12	A
3	A	13	A
4	A	14	D
5	B	15	B
6	C	16	A
7	C	17	D
8	A	18	C
9	A	19	D
10	B	20	D

1. If 1, y, 9 are in A.P., the value of y is
a. 3 b. -3 c. ± 3 d. None of these
2. The A.M. of two numbers is 34 and their G.M. is 16. The numbers are
a. 60,8 b. 64,4 c. 56,12 d. 52,16.
3. The 6th and 8th terms of an A.P. are 12 and 22 respectively. Its 2nd term is
a. 9 b. -8 c. 6 d. -3.
4. The 3rd and 5th terms of a G.P. are 12 and 48. Its second term is
a. 6 b. 4 c. 8 d. 2
5. The sum of p terms of an A.P. is $3p^2 + 4p$. Find the nth term
a. $5n + 2$ b. $6n + 1$ c. $8n + 3$ d. $7n + 3$.
6. Find the sum of the first hundred even natural numbers divisible by 7
a. 50,576 b. 50,560 c. 50,700 d. None of these
7. Find the sum of the numbers of three digits divisible by 7
a. 17,966 b. 11,77,996 c. 70,336 d. 70,696
8. Find the 10th term of the geometric series $5 + 25 + 125 + \dots$
a. 5^{10} b. 5^9 c. 5^{11} d. 5^8
9. Write down the 20th term of the G.P. 1, -1, 1, -1, -----
a. 1 b. ± 1 c. +1 d. None of these.
10. In a G.P., the first term is 7, the last term 448 and the sum 889. Find the common ratio.
a. 4 b. 6 c. 8 d. 2
11. If the first term of G.P. is 729 and 7th term is 64, determine S_7
a. 2,259 b. 3,059 c. 2,059 d. 2,459.
12. $(1+2+3+4+\dots+3983) / 1992 = ?$
a. 1988 b. 1992 c. 1990 d. None of these
13. The value of $15^2 + 16^2 + 17^2 + \dots + 70^2$ is
a. 1,17,580 b. 1,15,780 c. 1,18,750 d. None of these
14. The number of natural numbers divisible by 5 between 1 to 1,000 is
a. 1,197 b. 199 c. 198 d. 200.
15. The sum of all odd numbers between 1 to 1,000 which are divisible by 3 is
a. 83,667 b. 56,128 c. 90,000 d. None of these.
16. If a, b, c are in A.P. as well as in G.P., then
a. $a = b \neq c$ b. $a \neq b \neq c$ c. $a \neq b = c$ d. $a = b = c$
17. If 11 times of 11th term of an A.P. is equal to 14 times of 14th term, Then 25th term of an AP is
a. 1 b. 0 c. 22 d. 36
18. If a, b, c are in G.P. then $\log a, \log b, \log c$ are in
a. A.P. b. G.P. c. All of these d. None of these

19. If a, b, c, d, e, f are in A.P. then $e - c$ is equal to

- a. $2(c - a)$ b. $2(f - d)$ c. $2(d - c)$ d. $d - c$

20. The sum of the first $2n$ terms of the A.P. $2, 5, 8, \dots$ is equal to the sum of the first n terms of A.P. $57, 59, 61$ then n equals

- a. 10 b. 12 c. 11 d. 13

Answers : DD-86

Qs.	Answer	Qs.	Answer
1	D	11	C
2	B	12	D
3	B	13	B
4	A	14	B
5	B	15	A
6	D	16	D
7	C	17	B
8	A	18	A
9	D	19	C
10	D	20	C

1. The value of x such that $8x+4$, $6x-2$, $2x+7$ will form an A.P. is
a. 15 b. 2 c. $\frac{1}{2}$ d. None of these
2. The 6th and 17th term of AP are 19 and 41 respectively find 40th term
a. 63 b. 36 c. 87 d. 97
3. The sum of n terms of an AP is $3n^2+5n$ then ,AP is
a. 8,14,20,26 b. 8,22,42,68 c. 22,68,114 d. None of these
4. The number of numbers between 7 and 25556 divisible by 5 is
a. 5090 b. 5097 c. 5095 d. None of these
5. Find 8th term of the series 4,-8,16,-32.....
a. -512 b. 512 c. -521 d. 521
6. Find the sum of the series $2+1+\frac{1}{2}+\frac{1}{4}+\frac{1}{8}+\dots$
a. $\frac{17}{8}$ b. $\frac{9}{2}$ c. $\frac{7}{2}$ d. 4
7. The sum of 4 numbers in GP is 60 and AM of first and last is 18, the numbers are
a. 4,8,16,32 b. 4,16,8,32 c. 16,8,4,20 d. None of these
8. If common difference of an AP equals to the first term then the ratio of m^{th} term to n^{th} term is :
a. $n : m$ b. $m : n$ c. $m^2 : n^2$ d. None of these
9. If $a^x = b^y = c^z$ and x,y,z are in G.P then $\log a, \log b, \log c$ are in
a. A.P. b. G.P. c. A.P. and G.P.both d. None of these
10. Which term of series $0.004+0.02+0.10+\dots$ is 12.50?
a. 5 b. 10 c. 6 d. Non of these
11. The 6 terms between 5 and 215 are.....
a. (35,65,95,125,155,185) b. (50,99,132,166,192,201)
c. (30,65,90,130,165,190) d. (33,66,99,132,165,199)
12. The 4 terms of AP between 5 and 225 are.....
a. (49,93,137,181) b. (54,99,132,188)
c. (54,88,143,186) d. (43,92,132,190)
13. $4X+5$, $5X+7$, $8X-1$ will be in AP if X is.....
a. 5 b. 6 c. 7 d. 4
14. The sum of 3 numbers is 24 and their products is 304 (numbers are in AP), the numbers are
a. (4,8,12) b. (5,8,11) c. (5,9,10) d. None of these
15. If the 2nd term of a GM series is 16, the first and third terms are.....
a. (6,36) b. (2,32) c. (4,64) d. None of these
16. If 4,X,36 are three terms of a Geometric series then X is equal to
a. 13 b. 12 c. 15 d. 16
17. Three numbers are in G.P. If we double the middle term, we get an A.P. Then common ratio of the G.P. equals
a. $2^{\pm 3}$ b. $3^{\pm 2}$ c. $3^{\pm 5}$ d. $5^{\pm 3}$

18. The first term of an A.P. is 1 , the common difference is 3 and the last term is 67, find the number of terms.

- a. 25 b. 28 c. 23 d. 21

19. The next term of the series $\frac{3}{2} + \frac{5}{4} + \frac{9}{8} + \frac{17}{16} + \dots$ is

- a. 22/32 b. 29/32 c. 37/32 d. 33/32

20. What is the common ratio of G.P 3,-6,12,-24,48

- a. 2 b. 3 c. -2 d. -3

Answers : DD-87

Qs.	Answer	Qs.	Answer
1	D	11	A
2	C	12	A
3	A	13	A
4	D	14	D
5	A	15	C
6	D	16	B
7	A	17	A
8	B	18	C
9	B	19	D
10	C	20	C

1. In ${}^n P_r$, n is always
 - a. An interger
 - b. A positive integer
 - c. A fraction
 - d. None of these
2. If $P(m+n, 2) = 56$ and $P(m-n, 2) = 12$, then the value of m and n are :
 - a. $m=6$ & $n=2$
 - b. $m=5$ & $n=3$
 - c. $m=2$ & $n=6$
 - d. $m=3$ & $n=5$
3. The number of arrangements of 10 different things taken 4 at a time in which one particular thing always occurs is -
 - a. 2015
 - b. 2016
 - c. 2014
 - d. None
4. Number of arrangements using all letters of the word LAUGH, if vowels are adjacent is :
 - a. 10
 - b. 24
 - c. 48
 - d. 120
5. In how many ways can 10 books be arranged on a shelf so that a particular pair of books shall be always together?
 - a. $9!$
 - b. $2 \times 9!$
 - c. $8!$
 - d. None
6. The sum of all the numbers formed by taking all the digits from 2, 3, 4, 5 is
 - a. 6660000
 - b. 93325
 - c. 93324
 - d. 10368000
7. In how many ways can the letters of the word 'MACHINE' be arranged so that vowels may occupy only odd positions?
 - a. $4 \times 7!$
 - b. 576
 - c. 288
 - d. None
8. If all the permutations of the letters of the word "CHALK" are written in a dictionary, the rank of this word will be :
 - a. 30
 - b. 31
 - c. 32
 - d. None
9. The number of arrangement of the letters in the word "CALCULATOR" is
 - a. 907200
 - b. 226800
 - c. 498960
 - d. 453600
10. How many words can be formed using the letter A thrice, the letter B twice and the letter C once?
 - a. 60
 - b. 120
 - c. 90
 - d. 6
11. In how many ways can the letters of the word "COLLEGE" be arranged such that the 2 L's come together?
 - a. 400
 - b. 440
 - c. 360
 - d. None
12. Total no. of ways in which six "+" and four "-" signs can be arranged in a row so that no two "-" signs to be together, is -
 - a. 35
 - b. 70
 - c. $6! \times 4!$
 - d. 24
13. If different permutations of the word EXAMINATION are listed as in a dictionary, how many items are there in this list before the first word starting with E?
 - a. 906200
 - b. 907200
 - c. 908200
 - d. 905200
14. A letter lock consists of three rings each marked with 5 different letters. No. of maximum unsuccessful attempts to open the lock is :
 - a. 124
 - b. 125
 - c. 120
 - d. 75
15. The number of 5 letter words that can be formed using the letters of the word DELHI which begin & end with a vowel, when repetitions are allowed, is :
 - a. 125
 - b. 625
 - c. 500
 - d. 1350

16. No. of ways 15 persons be seated round a table if there are 7 seats, is :

- a. ${}^{15}P_7$ b. ${}^{15}C_7/7$ c. ${}^{15}P_7/7$ d. 14!

17. If ${}^nP_r = 720$ nC_r then $r=?$

- a. 6 b. 5 c. 4 d. 7

18. The number of straight lines can be formed from 10 points out of which 7 are collinear

- a. 26 b. 21 c. 25 d. None of these

19. How many words of 4 consonants and 3 vowels can be made from 12 consonants & 4 vowels, if all letters are different?

- a. 2,51,820 b. 2,58,120 c. 2,81,520 d. 44,35,200

20. There are 6 candidates for 3 posts, in how many ways the posts can be filled?

- a. 120 b. 130 c. 240 d. None of these

Answers : DD-88

Qs.	Answer	Qs.	Answer
1	B	11	C
2	A	12	A
3	B	13	B
4	C	14	A
5	B	15	C
6	C	16	C
7	B	17	A
8	C	18	C
9	D	19	D
10	A	20	A

1. There are 15 buses running between Latur and Pune. In How many ways can a man go from Latur to Pune and return by a different bus?
a. 280 b. 310 c. 240 d. 210
2. A code word is to consist of two distinct English alphabets followed by two distinct numbers between 1 and 9. For example 'CA 49 is code word' How many such code words can be there?
a. 6,15,800 b. 46,800 c. 7,19,500 d. 4,10,800
3. There are 6 multiple choice questions in an examination. How many sequences of answer are possible, if the first three questions have 4 choices and next three have 5 choices?
a. 6,000 b. 5,000 c. 4,000 d. 8,000
4. How many odd numbers less than 1000 can be formed using the digits 0,2,5,7? (repetition is allowed)
a. 52 b. 32 c. 22 d. 42
5. It is required to seat 5 men and 4 women in a row such that women occupy the even places. How many such arrangements are possible?
a. 2,880 b. 2,480 c. 3,680 d. 3,280
6. Four books, one each in Chemistry, Physics, Biology, Maths are to be arranged on a shelf. In how many ways it can be done?
a. 12 b. 36 c. 24 d. 48
7. In how many ways can 5 red and 4 white balls be drawn from a bag containing 10 red and 8 white balls
a. ${}^8C_5 \times {}^{10}C_4$ b. ${}^{10}C_5 \times {}^8C_4$ c. ${}^{10}C_9$ d. None of these
8. If $12 {}^nC_2 = 2^n C_3$: Find n
a. 7 b. 5 c. 9 d. 3
9. How many straight lines can be obtained by joining 16 points on a plane, no three points on the same line.
a. 120 b. 240 c. 119 d. 480
10. ${}^{10}P_r = 2 \cdot {}^9P_r$ is equal to
a. 2 b. 4 c. 5 d. 6
11. How many ways the letters of the word 'BALLOON' be arranged so that two L's do not come together?
a. 900 b. 1,200 c. 800 d. 600
12. In how many ways a cricket team of 11 players to be selected out of 16 players if two particular players are to be included and one particular player is to be rejected
a. 715 b. 615 c. 915 d. 515
13. How many numbers greater than a million can be formed with the digits 1,2,3,4,5,6,7
a. 7! b. 8! c. 9! d. None of these
14. There are three different rings to be worn in four fingers with at most one in each finger. In how many ways this can be done?
a. 12 b. 36 c. 24 d. 48
15. $(n+2)! = 2550 (n)!$ Find n
a. 38 b. 35 c. 49 d. 36

16. The number of all possible selections which a student can make for answering one or more questions out of eight given questions in a paper, when each question has an alternative is

- a. ${}^8C_1 + {}^8C_2 + \dots + {}^8C_8$ b. 2×2^8 c. 3^8 d. $3^8 - 1$

17. How many 3 digit numbers each less than 600 can be formed from the digits 1,2,3,4,5,9, If repetition is allowed

- a. 180 b. 165 c. 160 d. 185

18. The value of ${}^{15}C_{11} / {}^{15}C_{10}$ is equal to

- (a) $\frac{15}{11}$ (b) $\frac{15}{10}$ (c) $\frac{15}{11}$ (d) None of these

19. How many even numbers greater than 300 can be formed with the digits 1,2,3,4,5, no repetition being allowed ?

- a. 112 b. 111 c. 113 d. 121

20. A man has 5 friends. In how many ways can he invite one or more of his Friends to the dinner?

- a. 2^5 b. 31 c. 5C_2 d. 30

Answers : DD-89

Qs.	Answer	Qs.	Answer
1	D	11	A
2	B	12	A
3	D	13	A
4	B	14	C
5	A	15	C
6	C	16	D
7	B	17	A
8	B	18	D
9	A	19	B
10	C	20	B

1. There are 15 persons in a party and each person shakes hand with another. Then the total number of handshakes is
 a. ${}^{15}P_2$ b. ${}^{15}C_2$ c. 15! d. 2(15!)
2. $43C_{r-6} = 43C_{3r+1}$ Then the value of r is
 a. 12 b. 8 c. 6 d. 10
3. In how many ways can 4 boys and 3 girls be arranged in a row so that boys and girls are placed alternatively?
 a. $3! \times 2!$ b. 6! c. 7! d. $3! \times 4!$
4. If $m! = n!$ then
 a. $m=1$ and $n=1$ b. $m=1$ and $n=0$ c. $m=0$ and $n=1$ d. All of these
5. If ${}^nC_x = {}^nC_y$ then
 a. $x-y=0$ b. $x+y=n$ c. Both A or B d. None of these
6. The number of arrangements of letters of the word 'EQUATION' which begin & end with a consonant are
 a. 2,340 b. 4,320 c. 4,032 d. 2,034
7. If ${}^nP_4 = 12 \times {}^nP_2$ then $n = ?$
 a. -1 b. 6 c. 5 d. None
8. The value of $\sum r \times {}^rP_r$ is
 a. 719 b. 720 c. 5! d. None
9. 5 persons sitting in a round table in such a way that tallest is always on right side of shortest. The no. of such arrangement is
 a. 6 b. 8 c. 24 d. None
10. No. of ways in which 9 mangoes can be equally divided among 3 students is
 a. 1680 b. 1860 c. 362880 d. None
11. A committee of 3 ladies and 4 gents to be formed out of 8 ladies and 7 gent. Mrs. X refuses to serve in a committee if Mr. Y is a member. Number of such committees is
 a. 1530 b. 1500 c. 1520 d. 1540
12. ${}^{500}C_{92} = {}^{499}C_{92} + {}^nC_{91}$ then $n = ?$
 a. 501 b. 500 c. 502 d. 499
13. ${}^nC_0 + {}^nC_1 + {}^nC_2 + \dots + {}^nC_n = ?$
 a. 2^n b. 2^{n-1} c. 2^{n-2} d. None
14. Number of ways in which 9 things can be divided in 3 groups containing 2, 3, 4 things respectively is
 a. 1250 b. 1260 c. 1200 d. None
15. Number of ways in which 8 different beads can be strung on a necklace is.
 a. 2500 b. 2520 c. 2250 d. None
16. ${}^{51}C_{31} = ?$
 a. ${}^{51}C_{20}$ b. $2 \times {}^{50}C_{20}$ c. ${}^{51}P_{31}$ d. None
17. $4 \times {}^nP_3 = 5 \times {}^{n-1}P_3$ then $n = ?$
 a. 12 b. 13 c. 14 d. None

18. There are 50 stations on a railway line. How many different kinds of single first class tickets be printed to enable a passenger to travel from one station to another?

- a. 2500 b. 2450 c. 2400 d. None

19. If ${}^7P_n / {}^7P_{n-3} = 60$ then $n = ?$

- a. 8 b. 4 c. 5 d. None

20. ${}^{18}C_n = {}^{18}C_{n+2}$ then $n = ?$

- C. 0 b. -2 c. 8 d. None

Answers : DD-90

Qs.	Answer	Qs.	Answer
1	B	11	D
2	A	12	D
3	D	13	A
4	D	14	B
5	C	15	B
6	B	16	A
7	B	17	D
8	A	18	B
9	A	19	C
10	A	20	C

1. How many diagonals can be drawn by joining vertices of a pentagon ?
a. 5 b. 10 c. 15 d. None
2. How many parallelograms can be formed if 10 parallel lines are intersecting with another 15 parallel lines?
a. 4725 b. 4275 c. 2475 d. None
3. Out of 6 members belonging to party A and 4 to party B. In how many ways a committee of 5 can be formed so that members of party A will be in a majority?
a. 180 b. 186 c. 185 d. 184
4. What is the rank of word 'TALK' if all words by using letters of words are arranged in dictionary sequence?
a. 20 b. 18 c. 19 d. None
5. How many 4 digit numbers divisible by 5 can be formed by using 2, 1, 5, 7, 0.
a. 42 b. 48 c. 36 d. None
6. There are 25 points in a plane out of which 8 are collinear. How many triangles can be formed?
a. 1288 b. 2188 c. 8812 d. None
7. The value of ${}^{12}C_8 + {}^{12}C_3$ is
a. 715 b. 710 c. 751 d. 571
8. A dealer provides car and van in 2 body patterns and 5 different colours. How many choices are open to you?
a. 2 b. 7 c. 20 d. 10
9. How many 4 digit numbers greater than 7000 can be formed out of digits 3, 5, 7, 8, 9.
a. 24 b. 48 c. 72 d. 50
10. If ${}^n P_5 = 60$. ${}^{n-1} P_3$ then n is
a. 6 b. 15 c. 10 d. 12
11. The number of arrangements of n different things taken r at a time which include a particular thing is
a. ${}^{n-1} P$ b. $n \cdot {}^{n-1} P_{r-1}$ c. $r \cdot {}^{n-1} P_{r-1}$ d. $r \cdot {}^{n-1} P_r$
12. The number of ways in which a committee of 6 members can be formed from 8 gentlemen and 4 ladies so that the committee contains at least 3 ladies is
a. 252 b. 672 c. 144 d. None of these
13. If ${}^7 P_x = 42$ then X is equal to
a. 6 b. 5 c. 2 d. None of these
14. The value of n, when ${}^n P_2 = 20$ is
a. 3 b. 4 c. 6 d. 5
15. If ${}^n P_r = 336$ and ${}^n C_r = 56$, then n and r will be
a. (3, 2) b. (8, 3) c. (7, 4) d. None of these
16. If in a railway line there are 38 stations. How many different kinds of tickets of AC-II Tier must be printed so that a passenger may go from any station to another by purchasing a ticket.
a. 650 b. 1400 c. 1406 d. 1300

17. A dinner is arranged for 11 guests in which there are 4 African, 1 American and 6 Indian are invited. The 4 African wish to occupy 2 corner seats at each end and the American old man refuses to have a African on his either side. In how many ways can all guests be arranged?

- a. 28800 b. 43200 c. 86400 d. 14400

18. In how many ways can 6 gentle men and 4 ladies be seated at a round table.

- a. $9!$ b. $5!4!$ c. $5!3!$ d. None of these

19. In how many ways 5 sportsmen can be selected from a group of 10

- a. 272 b. 282 c. 252 d. 242

20. How many lines can be drawn from 21 points on a circle?

- a. 310 b. 210 c. 410 d. 570

Answers : DD-91

Qs.	Answer	Qs.	Answer
1	A	11	C
2	A	12	A
3	B	13	C
4	A	14	D
5	A	15	B
6	D	16	C
7	A	17	C
8	C	18	A
9	C	19	C
10	C	20	B

1. We wish to select 6 persons from 8, but if the person A is chosen, then B must be chosen too. In how many ways can selection be made?
a. 24 b. 32 c. 16 d. 22
2. $(n+1)! = 6(n-1)!$ Then $n=?$
a. 6 b. 4 c. 8 d. 2
3. The number of different words of letters of the word 'BANANA' are
a. 270 b. 60 c. 120 d. 360
4. A group of 13 friends send the greetings to each other. How many greetings card are to be purchased by the friends.
a. ${}^{13}C_2$ b. 144 c. 169 d. 156
5. There are 8 true-false questions in the examination. How many sequences of answers are possible?
a. 16 b. 255 c. 256 d. 512
6. ${}^5C_r : {}^5P_r = 1:r!$
a. Correct b. Incorrect c. Can't say d. None of these
7. In an examination a candidate has to pass in each of 4 papers. In how many different ways he can be failed?
a. 14 b. 16 c. 15 d. None of these
8. ${}^{18}C_r = {}^{18}C_{r+2}$ then ${}^rC_5 = ?$
a. 55 b. 50 c. 56 d. None of these
9. If 7 points out of 12 are in the straight line, then the number of triangles formed is
a. 19 b. 158 c. 185 d. 201
10. Number of numbers greater than 1000 but less than 4000 that can be formed by using digits 0,1,2,3,4 when repetition is allowed is
a. 125 b. 500 c. 375 d. 625
11. Twelve students compete for a race. The number of ways in which first three places can be taken is
a. 3! B. $12 \cdot 11 \cdot 10$ c. $12!/3!9!$ d. $12!-3$
12. Find number of triangles that can be formed with 10 points in a plane, 4 of them are collinear?
a. 4b. 116 c. 120 d. 40
13. In how many different ways can 8 examination papers be arranged in a line so that the best and worst papers are never together?
a. 30,240 b. 30,330 c. 30,540 d. 30,630
14. In how many ways 52 cards be equally divided among 4 players?
a. $52! \times (13!)^4$ b. $52! / (13!)^4$ c. $52 / 4$ d. None of these
15. Six boys and 5 girls are to be seated in a row such that no 2 girls and no 2 boys sit together. Find the no. of ways in which this can be done.....
a. 86400 b. 85000 c. 85400 d. None of these
16. In how many ways can I invite one or more of my six friends ?
a. 63 b. 64 c. 60 d. None of these

17. In a party of 40 people ,each shakes hand with others. How many handshakes took place in the party?
- a. 780 b. 700 c. 880 d. None of these
18. $5!$ is equal to
- a. 120 b. 124 c. 210 d. 180
19. $[8! / 5!]$ is equal to
- a. 336 b. 321 c. 244 d. 422
20. How many words can be formed from the word "BHARAT"
- a. 360 b. 180 c. 90 d. 45
21. Out of 128 families with 4 children each, How many are expected to have atleast one boy and atleast one girl?
- a. 100 b. 105 c. 108 d. 112

Answers : DD-92

Qs.	Answer	Qs.	Answer
1	D	11	B
2	D	12	B
3	B	13	A
4	D	14	B
5	C	15	A
6	A	16	A
7	C	17	A
8	C	18	A
9	C	19	A
10	C	20	A
		21	D

1. An experiment succeeds thrice as after it fails. If the experiment is repeated 5 times, What is the probability of having no success at all?
a. $1/1024$ b. $2/512$ c. $3/256$ d. None of these
2. The letters of the word COMPUTER can be arranged in
a. 40320 ways b. 40319 ways c. 40318 ways d. None of these
3. The vowels must be together, the number of arrangements of letters of the word FAILURE is
a. 576 b. 575 c. 570 d. None of these
4. If no digit is repeated, then the number of 4 digit numbers greater than 5000, formed from the digits 3,4,5,6,7 are
a. 72 b. 27 c. 70 d. None of these
5. The letters of the word CALCUTTA and AMERICA are arranged in all possible ways. Ratio of number of arrangements is
a. 1:2 b. 2:1 c. 2:2 d. None of these
6. How many numbers greater than 23,000 can be formed from the digits 1,2,3,4,5 if repetition is not allowed
a. 18 b. 72 c. 90 d. None of these
7. How many 5 digits numbers can be formed by using distinct digits?
a. $10 \times 9 \times 8 \times 7 \times 6$ b. $9 \times 9 \times 8 \times 7 \times 6$ c. 9^5 d. 5^8
8. In how many ways can a cricket team selected so that a particular player is always there? (from 20 players)
a. ${}^{19}C_{10}$ b. ${}^{20}C_{10}$ c. ${}^{19}C_{11}$ d. ${}^{20}C_{11}$
9. $(n+1)! - n! = n \cdot n!$
a. True b. False c. Can't Say d. None of these
10. Number of ways in which letters of the word DOGMATIC can be arranged is
a. 40319 b. 40320 c. 40321 d. None of these
11. In a group of boys the number of arrangements of 4 boys is 12 times the number of arrangements of 2 boys. The number of boys in group are
a. 10 b. 8 c. 6 d. None of these
12. Out of 7 gents and 4 ladies a committee of 5 is to be formed. The number of committees such that each committee includes atleast 1 lady is
a. 400 b. 440 c. 441 d. None of these
13. There are 12 points in a plane of which 5 are collinear. The number of triangles is
a. 200 b. 211 c. 210 d. None of these
14. Every person shakes the hand with each other in a party and total number of handshakes is 66. The number of guests in a party is
a. 11 b. 12 c. 13 d. 14
15. A question paper contains 6 questions, (each having one alternative.) The number of ways in which a student can answer one or more questions is
a. 63 b. 720 c. 729 d. None of these

16. 5 letters are written and there are 5 letter boxes. The number of ways the letters can be dropped into the boxes is –

- a. 119 b. 120 c. 121 d. None of these

17. 8 points are marked on circumference of circle. Number of chords obtained by joining these points are

- a. 25 b. 27 c. 28 d. None of these

18. A supreme court bench consist of 5 judges. In how many ways can the bench give a majority decision?

- a. 15 b. 16 c. 17 d. None of these

19. There are 4 teachers and 16 students, and a committee of 5 persons is to be formed. The number of ways in which this can be done so as to include exactly 3 teachers is

- a. 479 b. 496 c. 480 d. None of these

20. There are 4 teachers and 16 students, and a committee of 5 persons is to be formed. The number of ways in which this can be done so as to include atleast 3 teachers is

- a. 496 b. 596 c. 489 d. None of these

Answers : DD-93

Qs.	Answer	Qs.	Answer
1	A	11	C
2	A	12	C
3	A	13	C
4	A	14	B
5	B	15	D
6	C	16	B
7	B	17	C
8	A	18	B
9	A	19	C
10	B	20	A

1. How many 3 digit odd numbers can be formed by using 1,3,5 , if repetition is allowed?
a. 3^3 b. $3!$ c. $3 \times 3 \times 4$ d. None of these
2. How many positive numbers are there less than 100 such that exactly one of digits is 7
a. 18 b. 20 c. 21 d. 22 e. None of these
3. Five digit number can be formed from 3,1,7,0,9,5 divisible by 5 are
a. 120 b. 216 c. 96 d. 384
4. A team of 11 players chosen from 9 batsmen and 6 bowlers, the number of ways with 8 batsmen and 3 bowlers are
a. 18 b. 9 c. 180 d. 20
5. How many numbers are there between 0 and 100 such that there is one 6 as one of their digits?
a. 20 b. 18 c. 9 d. 19
6. ${}^{56}P_{r+6} : {}^{54}P_{r+3} = 30,800:1$ then the value of r is
a. 42 b. 41 c. 45 d. None of these
7. In a group of boys, two boys are brothers and in this group 6 more boys are there. In how many ways can they sit if the brothers are not to sit along with each other.
a. $2 \times 6!$ b. ${}^7P_2 \times 6!$ c. ${}^7C_2 \times 6!$ D. None of these
8. In a class there are 5 students who are eligible for inter-school competition but only 3 student are to be selected, so polling is arranged and a student is entitled to vote for any number to be elected . In how many ways may a student choose a vote?
a. 24 b. 23 c. 26 d. 25
9. A survey was conducted to study the readership pattern of 100 management students who read at least one of three business magazines. It is found that 80 read Business India, 50 read Business World and 30 read Business Today. Five students read all three magazines. How many read exactly two magazines.
a. 50 b. 10 c. 95 d. 25
10. 300 students are made to stand in rows in the shape of an isosceles triangle, the numbers in successive rows diminishes by one from the base to the apex. How many students are there in the row, which forms the base of the triangle?
a. 30 b. 21 c. 27 d. 24
11. The number of ways in which 3 friends can stay in 2 hotels is
a. 2^3 b. 3^2 c. 3P_2 d. None of these
12. The number of diagonals that can be drawn by joining the vertices of heptagon (figure having seven sides) is
a. 14 b. 21 c. 7 d. 24
13. In a college examination a candidate is required to attempt 6 questions out of 10 questions which are divided into two sections each containing 5 questions. Further the candidate is not permitted to attempt more than 4 questions from either of the section. The number of ways in which he can make up a choice of 6 questions is
a. 15 b. 200 c. 100 d. 50

14. In a school 21 students play basket ball, 26 students hockey and 29 play football. 14 students play hockey and basket-ball, 15 play hockey and football and 12 play football and basketball. If 8 students play all the three games, what is the total number of players?
a. 45 b. 44 c. 34 d. 43
15. Seven women and seven men are to sit around a circular table such that there is a man on either side of every woman. The number of seating arrangements is -
a. $(7!)^2$ b. $(6!)^2$ c. $6! 7!$ d. $7!$
16. If ${}^n P_3 = 120$, then n is equal to
a. 4 b. 5 c. 6 d. None of these
17. The number of different four digits numbers that can be formed with the digits 2, 3, 4, 5, 7 using each digit only once is
a. $4!$ b. $4(4!)$ c. $5!$ d. $5(7!)$
18. If ${}^n P_5 = 60$. ${}^{n-1} P_3$ then n is
a. 6 b. 15 c. 10 d. 12
19. The number of ways the letter of the word "Triangle" to be arranged so that the word 'angle' will be always present is
a. 20 b. 60 c. 24 d. 32
20. The number of diagonals in a decagon is
a. 30 b. 35 c. 45 d. None of these

Answers : DD-94

Qs.	Answer	Qs.	Answer
1	A	11	A
2	A	12	A
3	B	13	B
4	C	14	D
5	D	15	C
6	B	16	C
7	B	17	C
8	D	18	C
9	A	19	C
10	D	20	B

1. The term 'chance' and probability are synonymous.
 - a. True
 - b. False
 - c. Both
 - d. None of these
2. For any two events A and B
 - a. $P(A) + P(B) < P(A \cap B)$
 - b. $P(A) + P(B) > P(A \cap B)$
 - c. $P(A) + P(B) \leq P(A \cap B)$
 - d. $P(A) + P(B) \geq P(A \cap B)$
3. All possible outcomes of random experiment forms the
 - a. Sample space
 - b. Events
 - c. Both
 - d. None of these
4. $P(B/A)$ is defined only when
 - a. B is a sure event
 - b. A is a sure event
 - c. A is not an impossible event
 - d. B is an impossible event
5. The probability space in tossing two coins is
 - a. $\{(H,T),(T,H),(T,T)\}$
 - b. $\{(H,T),(T,H),(T,T),(H,H)\}$
 - c. $\{(H,H),(T,H),(T,T),(H,H)\}$
 - d. $\{(H,T),(T,H),(T,T),(H,T)\}$
6. Probability mass function is always:
 - a. 0
 - b. Greater than 0
 - c. Greater than or equal to 0
 - d. None of these
7. If $P(A) = P(B)$ then A, B are
 - a. Dependent
 - b. Independent
 - c. Equally likely
 - d. Both A and C
8. If $P(A-B) = P(B-A)$ then,
 - a. $P(A) = P(B)$
 - b. $P(A) + P(B) = 1$
 - c. If $P(A) \neq P(B)$
 - d. None of these
9. For a certain/sure event A,
 - a. $P(A) = 0$
 - b. $P(A) \neq 0$
 - c. $1 - P(A) \neq 0$
 - d. $1 - P(A) = 0$
10. If event A and B are independent then probability of occurrence of A as well as B is given by:
 - a. $P(A) \times P(B)$
 - b. $P(A \cup B)$
 - c. $P(A=B)$
 - d. Both option A and B
11. The probability of a bomb hitting a target is $1/5$. Two bombs are enough to destroy a building. If six bombs are aimed at the building, find the probability that a building is destroyed.
 - a. 0.665
 - b. 0.345
 - c. 0.645
 - d. 0.525
12. If p:q are the odds against an event then the probability of not occurrence of that event is
 - a. $p/(p+q)$
 - b. p/q
 - c. $q/p+q$
 - d. None of these
13. The odds against a certain event are 5:2 and odds in favour of another event, independent of the former, are 6:5. Find the chance that atleast one of the events will
 - a) $25/77$
 - b. $35/77$
 - c. $52/77$
 - d. $65/87$
14. If $P(A) = 8/13$ then odds in favour of event A are
 - a. 8:13
 - b. 13:8
 - c. 8:5
 - d. None of these
15. For any two events
 - a. $P(A-B) = P(A) - P(B)$
 - b. $P(A-B) = P(A) - P(A \cap B)$
 - c. $P(A-B) = P(B) - P(A \cap B)$
 - d. $P(A-B) = P(A) - P(A \cap B)$
16. If A is an event and A^C is its complementary event then
 - a. $P(A) - P(A^C) = 1$
 - b. $P(A) + P(A^C) = 0$
 - c. $P(A) + P(A^C) = 1$
 - d. None of these
17. The probability that A will solve the problem is $2/3$ and B can solve is $3/4$. If both of them attempt the problem, What is the probability that problem gets solved
 - a. $9/12$
 - b. $7/12$
 - c. $5/12$
 - d. $11/12$

18. If $P(A) = 0.40$, $P(A \cup B) = 0.70$ If A and B are independent events then $P(B) =$
a. 0.22 b. 0.33 c. 0.30 d. 0.50
19. If $P(A) = 0$ then the event A
a. Will never happen b. May happen c. Will always happen d. May not happen
20. Two dice are thrown at a time and the sum of numbers on them noted is 6. The probability of getting number 2 on any of the dice is
a. $\frac{2}{36}$ b. $\frac{5}{36}$ c. $\frac{6}{36}$ d. None of these

Answers : DD-95

Qs.	Answer	Qs.	Answer
1	A	11	B
2	D	12	A
3	A	13	C
4	C	14	C
5	B	15	D
6	C	16	C
7	C	17	D
8	A	18	D
9	D	19	A
10	A	20	D

1. Two dice are rolled simultaneously, what is the probability that the sum of two numbers on the dice is a prime number
a. $5/12$ b. $4/12$ c. $1/22$ d. $1/6$
2. The probability that the number selected from first 100 natural numbers is a perfect cube is
a. $4/24$ b. $4/25$ c. $1/25$ d. $1/10$
3. The probability that a candidate passes CPT exam is 0.10. 7 candidates are selected at random from the class what is the probability that exactly 2 of them will pass
a. $15 (0.10)^2 (0.90)^2$ b. $21 (0.10)^5 (0.90)^2$ c. $20 (0.10)^2 (0.90)^5$ d. $21 (0.10)^2 (0.90)^5$
4. The probability of choosing the number at random that is divisible by 6 or 8 from first 90 natural numbers is
a. $26/90$ b. $24/90$ c. $23/90$ d. None of these
5. A and B are mutually exclusive events with $P(A) = [0.50.P(B)]$ and $A \cup B = S$, the sample space. Then $P(A) =$
a. $2/3$ b. $1/3$ c. $1/4$ d. $3/4$
6. In a class 40% students read Mathematics, 25% Biology and 15% both Mathematics and Biology. One student is select at random. The probability that the reads Biology if he reads Mathematics is:
a. $1/8$ b. $7/8$ c. $3/8$ d. None of these.
7. A single letter is selected at random from the word 'PROBABILITY' .The probability that it is a vowel is,
a. $3/11$ b. $4/11$ c. $2/11$ d. None of these
8. The number of 4 different digits is formed by using 1,2,3,4,5,6,7. Find the probability that it is divisible by 5.
a. $1/4$ b. $1/5$ c. $1/6$ d. None of these
9. The probability of two events A and B are 0.25 and 0.35 respectively. The probability of occurring both events is 0.15. probability that neither A nor B occurs is
a. 0.35 b. 0.65 c. 0.50 d. 0.55
10. One dice and one coin is tossed simultaneously. The probability of getting 5 points on the dice and tail on the coin is
a. $1/2$ b. $1/12$ c. $1/6$ d. Can't say
11. A bag contains tickets numbered from 1 to 20. two tickets are drawn. The probability that both numbers are prime numbers is
a. $14/95$ b. $17/95$ c. $20/95$ d. None of these
12. If A and B are mutually exclusive events and $P(B) = 0.20$, $P(A \cup B) = 0.80$ then $P(A) =$
a. 0.60 b. 0.40 c. Incorrect data d. 1.00
13. In continuous probability distribution $f(x)$ is called
a. Frequency distribution function b. Cumulative distribution function
c. Probability density function d. None
14. The probability that a man can hit the target is $\frac{3}{4}$. He tries 5 times. The probability that he will hit the target at least 3 times is
a. $291/364$ b. $371/464$ c. $471/502$ d. $459/512$
15. From a well shuffled pack of 52 cards, 3 cards are drawn at random. Find the probability that three cards drawn contain 2 kings and one ace.
a. $4/5525$ b. $5/5525$ c. $6/5525$ d. None of these

16. If three unbiased coins are tossed. Find the probability of getting atleast two tails and atmost two tails.

- a. $1/2, 3/8$ b. $1/2, 5/8$ c. $1/2, 1/4$ d. None of these

17. An occurrence of set of events which implies, non occurrence of another set of events is known as:

- a. Mutually inclusive b. Mutually exhaustive c. Independent d. None of these

18. The probability of having atleast one tail in four throws with a coin is

- a. $1/16$ b. $13/16$ c. 1.00 d. None of these

19. If the mean is 'a' and variance is 'b' in a Poisson distribution, then

- a. $a + b = 0$ b. $a - b = 0$ c. $a \times b = 0$ d. None of these

20. In a Poisson distribution of $P(X = 0) = P(X=1) = k$, the value of k is:

- a. 1 b. $1/e$ c. e d. e

Answers : DD-96

Qs.	Answer	Qs.	Answer
1	A	11	A
2	C	12	A
3	D	13	A
4	C	14	D
5	B	15	C
6	C	16	D
7	B	17	D
8	D	18	D
9	D	19	B
10	B	20	B

1. The probability of getting score 5 atleast once when a dice is thrown thrice is
a. $\frac{5}{6}$ b. $\frac{125}{216}$ c. $\frac{1}{216}$ d. $\frac{91}{216}$
2. The odds in favour of one student passing a test are 3:7. The odds against another student passing it are 3:5. The probability that both pass is:
a. $\frac{5}{16}$ b. $\frac{21}{80}$ c. $\frac{9}{80}$ d. $\frac{3}{16}$
3. If 7 points out of 12 are in the straight line, then the number of triangles formed is
a. 19 b. 158 c. 185 d. 201
4. If A,B,C are mutually exclusive and exhaustive events then $P(A) + P(B) + P(C) =$
a. $\frac{1}{3}$ b. 1 c. 0 d. Any value between 0 and 1
5. Rectangular Distribution is a
a. Discrete probability distribution c. Continuous probability distribution
b. Both of these d. None of these
6. $P(A/B')$ is defined only when -
a. B is a sure event c. B is not a sure event
b. B is an impossible event d. B is not an impossible event
7. Following are wages of 8 workers in rupees – 50, 62, 40, 70, 45, 56, 32, 45. If one worker is selected at random, what is the probability that his wages are less than average wages?
a. 0.625 b. 0.50 c. 0.375 d. 0.45
8. For 2 independent events A, B. If $P(A) = \frac{2}{5}$, $P(A \cup B) = \frac{2}{3}$, then $P(B) = ?$
a. $\frac{4}{15}$ b. $\frac{4}{9}$ c. $\frac{5}{9}$ d. $\frac{7}{15}$
9. If $P(A) = a$, $P(B) = b$, $P(A \cap B) = c$, then $P(A' \cap B')$ is
a. $1-a-b-c$ b. $a+b-c$ c. $1+a-b-c$ d. $1-a-b+c$
10. It is given that a family of 2 children has a girl. What is probability that other child is also a girl?
a. 0.50 b. 0.75 c. 0.3333 d. 0.66666
11. If $P(A) = 0.60$, $P(B) = 0.30$, $P(A \cap B) = 0.10$. Find -
 $P(A \cup B) =$
a. 0.20 b. 0.80 c. 0.50 d. 0.90
12. A player has 7 cards in hands of which 5 are red and of these five 2 are kings. A card is drawn at random. The probability that it is a king, it being known that it is red is
a. $\frac{2}{5}$ b. $\frac{3}{5}$ c. $\frac{4}{5}$ d. None
13. If 4 coins are tossed. The chance that there should be two tails is
a. $\frac{1}{2}$ b. $\frac{3}{8}$ c. $\frac{1}{8}$ d. None
14. Two events A and B are mutually exclusive means they are
a. Not disjoint b. Disjoint c. Equally likely d. None
15. If it rains a dealer in umbrella can earn ₹ 300 per day, if it does not rain he can lose ₹ 80 per day. What is his expectation if the probability of a rainy day is 0.57 (in rupees) is :
a. 136.6 b. 138.6 c. 146.6 d. 146
16. A player tossed two coins. If two heads show he wins ₹ 4. If one head shows he wins ₹ 2, but if two tails show he pays ₹ 3 as penalty. The expected value of the game to him (in rupees) is:
a. 1.25 b. 2.25 c. 3.25 d. 1.35

17. A random variable has the following probability distribution:

X	4	5	6	8
P	0.1	0.3	0.4	0.2

The expected value of X is:

- a. 4.9 b. 5.9 c. 3.9 d. 6.9

18. A number is chosen at random among the first 120 natural numbers. The probability of the number chosen being a multiple of 5 or 15 is:

- a. $\frac{1}{8}$ b. $\frac{1}{7}$ c. $\frac{1}{6}$ d. $\frac{1}{5}$

19. 10,000 tickets each of ₹ 1 are sold in a lottery. There is only one ticket in the lottery bearing a prize of Rs. 8000. Ram has one ticket of the lottery. The expectation of Ram is: - -

- a. -0.20 b. 0.20 c. -0.10 d. 0.04

20. The data reveals that 10 per cent patients die in a particular type of operation. A doctor performed 9 operations and all of them survive(d) Whether the 10th patient on being operated:

- a. Will survive b. Will die c. May survive or die d. None of the above

Answers : DD-97

Qs.	Answer	Qs.	Answer
1	D	11	B
2	D	12	A
3	C	13	B
4	B	14	B
5	A	15	A
6	C	16	A
7	B	17	B
8	B	18	D
9	D	19	A
10	A	20	C

1.1.. $P(A) = 0.50$ then $P(A)'$ = ?

- a. $\frac{1}{2}$ b. $\frac{1}{3}$ c. $\frac{1}{7}$ d. $\frac{1}{4}$

2. Let A and B the events with $P(A) = \frac{1}{3}$, $P(B) = \frac{1}{4}$ and $P(A \text{ and } B) = \frac{1}{12}$ then $P(A/B)$ is equal to

- a. $\frac{1}{3}$ b. $\frac{1}{2}$ c. $\frac{3}{4}$ d. $\frac{2}{3}$

3. If $P(A) = \frac{1}{5}$, $P(B) = \frac{1}{2}$ and A and B are mutually exclusive then $P(A \cup B)$ is

- a. $\frac{7}{10}$ b. $\frac{3}{10}$ c. $\frac{1}{5}$ d. None of these

4. A random variable has the following probability distribution:

X	40	50	60	80
P	0.10	0.30	0.20k	0.10k

The expected value of X is:

- a. 49 b. 59 c. 39 d. 69

5. Ticket numbered 1 to 20 are mixed up and then a ticket is drawn at random. What is the probability that the ticket drawn bears a number which is multiple of 2 or 4?

- a. $\frac{1}{5}$ b. $\frac{2}{5}$ c. $\frac{3}{5}$ d. $\frac{1}{2}$

6. A card is drawn from a pack of playing cards at random. What is the probability that the card drawn is neither a king nor a heart?

- a. $\frac{4}{13}$ b. $\frac{9}{13}$ c. $\frac{2}{13}$ d. None of these

7. A bag contains 3 red, 5 yellow and 4 green balls. 3 balls are drawn at random. Find the chance that balls drawn contain exactly two green balls.

- a. $\frac{12}{55}$ b. $\frac{10}{55}$ c. $\frac{13}{55}$ d. None of these

8. A bag contains 4 white balls and 2 black balls. Another contains 3 white and 5 black balls. If one ball is drawn from each bag. Then the probability that one is white and one is black is -

- a. $\frac{11}{24}$ b. $\frac{13}{24}$ c. $\frac{15}{25}$ d. None of these

9. A bag contains 5 red and 4 black balls. A ball is drawn at random from the bag and put into another bag that contains 3 red and 7 black balls. A ball is drawn randomly from the second bag. What is the probability that it is red?

- a. $\frac{32}{99}$ b. $\frac{1}{3}$ c. $\frac{74}{99}$ d. None of these

10. A committee of 4 persons is to be appointed from 3 officers of the production department, 4 officers of the purchase department, two officers of the sales department and 1 Chartered Accountant. Find the chance there must be one from each category.

- a. $\frac{4}{35}$ b. $\frac{3}{35}$ c. $\frac{1}{7}$ d. None of these

11. A committee of 4 persons is to be appointed from 3 officers of the production department, 4 officers of the purchase department, two officers of the sales department and 1 Chartered Accountant. Find the chance that it should have at least one from the purchase department.

- a. $\frac{4}{35}$ b. $\frac{39}{42}$ c. $\frac{42}{105}$ d. None of these

12. A committee of 4 persons is to be appointed from 3 officers of the production department, 4 officers of the purchase department, two officers of the sales department and 1 Chartered Accountant. Find the chance that the Chartered Accountant must be in the committee.

- a. $\frac{4}{35}$ b. $\frac{39}{42}$ c. $\frac{42}{105}$ d. None of these

13. A, B, C are three mutually exclusive and exhaustive events associated with a random experiment. Find $P(A)$, given that $P(B) = \frac{3}{2} P(A)$ and $P(C) = \frac{1}{2} P(B)$

- a. $\frac{3}{13}$ b. $\frac{4}{13}$ c. $\frac{5}{13}$ d. None of these.

14. A committee of four has to be formed from among 3 economists, 4 engineers, 2 statisticians and 1 doctor. What is the probability that the committee consists of the doctor and at least one economist?
a. 0.3048 b. 0.6048 c. 0.9048 d. None of these
15. The probability that a contractor will get a plumbing contract is $\frac{2}{3}$, and the probability that he will not get an electric contract is $\frac{5}{9}$. If the probability of getting at least one contract is $\frac{4}{5}$. What is the probability that he will get both the contracts?
a. $\frac{14}{45}$ b. $\frac{13}{45}$ c. $\frac{11}{45}$ d. None of these.
16. A problem of Mathematics is given to three students X, Y and Z whose chance of solving it are $\frac{1}{3}$, $\frac{1}{4}$ and $\frac{1}{5}$ respectively. Find the chance that the problem will be solved?
a. $\frac{4}{5}$ b. $\frac{2}{5}$ c. $\frac{3}{5}$ d. None of these
17. If $P(A) = \frac{1}{2}$; $P(B) = \frac{1}{3}$ and $P(A \cap B) = \frac{1}{4}$ then the value of $P(A/B)$ is –
a. $\frac{3}{4}$ b. $\frac{1}{4}$ c. $\frac{2}{5}$ d. None of these
18. If $P(A) = \frac{1}{2}$; $P(B) = \frac{1}{3}$ and $P(A \cap B) = \frac{1}{4}$ then the value of $P(A' \cap B')$ is –
a. $\frac{5}{12}$ b. $\frac{7}{12}$ c. $\frac{1}{2}$ d. None of these
19. Probability distribution is known as theoretical distribution. This is
a. False b. True c. Either (a) or (b) d. None of these
20. A Chartered Accountant applies for a job in two firms X & Y. He estimates that the probability of his being selected in firm X is 0.7, and being rejected at Y is 0.5 and the probability of at least one of his applications being rejected is 0.6. What is the probability that he will be selected in exactly one of the firms?
a. 0.8 b. 0.7 c. 0.9 d. None of these

Answers : DD-98

Qs.	Answer	Qs.	Answer
1	A	11	B
2	A	12	C
3	A	13	B
4	B	14	A
5	D	15	A
6	B	16	C
7	A	17	A
8	B	18	A
9	A	19	B
10	A	20	D

1. A card is drawn from a well shuffled pack of playing cards. Find the probability that it is either a diamond or a king.
a. $5/13$ b. $3/13$ c. $4/13$ d. None of these
2. A problem in statistics is given to two students A and B. The odd in favour of A solving the problem are 6 to 9 and against B solving the problem are 12 to 10. If both A and B attempt, find the probability of the problem being solved.
a. 0.673 b. 0.237 c. 0.255 d. None of these
3. If one card is drawn at random from a pack of playing cards; find the probability it is neither a heart nor a club:
a. $\frac{1}{2}$ b. $\frac{3}{4}$ c. $\frac{1}{8}$ d. None of these
4. Three balls are drawn at random from a bag containing 6 blue and 4 red balls. What is the chance that 2 balls are blue and 1 is red?
a. $\frac{1}{4}$ b. $\frac{3}{4}$ c. $\frac{1}{2}$ d. None of these
5. Find the probability of 53 Mondays in a leap year?
a. $\frac{2}{7}$ b. $\frac{3}{7}$ c. $\frac{4}{7}$ d. None of these.
6. Two letters are drawn at random from the word "HOME" Find the probability that both the letters are vowels?
a. $\frac{1}{6}$ b. $\frac{5}{6}$ c. $\frac{2}{3}$ d. None of these
7. Two letters are drawn at random from the word "HOME. Find the probability that at least one is a vowel?
a. $\frac{5}{6}$ b. $\frac{1}{6}$ c. $\frac{1}{3}$ d. None of these
8. Two letters are drawn at random from the word "HOME. Find the probability that one of the letter selected should be M.
a. $\frac{1}{4}$ b. $\frac{1}{2}$ c. $\frac{3}{4}$ d. None of these
9. A and B are two mutually exclusive events of an experiment. If $P(\text{'not A'}) = 0.65$, $P(A \cup B) = 0.65$ and $P(B) = p$. Then the value of p is -
a. 0.35 b. 0.60 c. 0.30 d. None of these
10. Three groups of children contain respectively 3 girls and 1 boy; 2 girls and 2 boys and 1 girl and 3 boys. One child is selected at random from each group. Then the chance that the three selected consist of 1 girl and 2 boys is
a. $\frac{17}{32}$ b. $\frac{15}{32}$ c. $\frac{13}{32}$ d. None of these
11. Eight coins are thrown simultaneously, Find the probability of getting at least 6 heads?
a. $\frac{37}{512}$ b. $\frac{74}{4024}$ c. $\frac{37}{256}$ d. None of these
12. If 15 dates are selected at random what is the probability of getting 2 Sundays?
a. $\frac{3}{7}$ b. 0.29 c. 0.71 d. None of these
13. The incidence of occupational disease in an industry is such that a workman is having 10% chance of suffering from it. What is the probability that out of 5 workmen, 3 or more will contract the disease?
a. 0.86% b. 86% c. 14% d. 1.23%
14. Find the probability of success for the binomial's distribution satisfying the following relation $4P(x=4) = P(x=2)$ and having other parameter i.e. $n=6$?
a. $\frac{1}{3}$ b. $\frac{2}{3}$ c. 0.75 d. $\frac{4}{5}$
15. The overall % of success in an exam is 60, What is the probability that out of group of 4 students atleast 1 has passed?
a. 0.6525 b. 0.9744 c. 0.8704 d. 0.0256

16. For a binomial distribution with mean = 4 and variance = 3, the mode is -
a. 4 b. 4.25 c. 4.5 d. 4.1
17. What is the probability of guessing correctly atleast 6 of 10 answers in a TRUE-FALSE objective test?
a. $193/512$ b. $46/512$ c. $193/1024$ d. None of these
18. Out of 128 families with 4 children each, How many are expected to have atleast one boy and atleast one girl?
a. 100 b. 105 c. 108 d. 112 e. None of these
19. The total area of the normal curve is
a. 1.00 b. 0.50 c. 0.25 d. Any value between 0 and 1
20. An experiment succeeds thrice as after it fails. If the experiment is repeated 5 times, What is the probability of having no success at all?
a. $1/1024$ b. $2/512$ c. $3/256$ d. None of these

Answers : DD-99

Qs.	Answer	Qs.	Answer
1	C	11	C
2	A	12	B
3	A	13	A
4	C	14	A
5	A	15	B
6	A	16	A
7	A	17	A
8	B	18	D
9	C	19	A
10	C	20	A

1. Find mean and SD of x where x is poisson variate satisfying $P(x=2) = P(x=3)$
 - a. $m=3$
 - b. $m=2$
 - c. $m=1$
 - d. None of these
2. Probability distribution may be
 - a. Discrete
 - b. Continuous
 - c. Infinite
 - d. Option (a) or (b)
3. Binomial Probability distribution is
 - a. Discrete
 - b. Continuous
 - c. Infinite
 - d. Option (a) and (b)
4. Binomial Probability distribution is
 - a. uniparametric
 - b. biparametric
 - c. Both of these
 - d. None of these
5. Two parameters of binomials distribution are
 - a. p, q
 - b. n, p
 - c. n, o
 - d. None of these
6. Mean in case of binomial distribution
 - a. Always more than variance
 - b. Always less than variance
 - c. Always equal to variance
 - d. Always equal to S.D.
7. The variance of binomial distribution attains its maximum value at
 - a. $n/4$
 - b. $p=0.4$
 - c. $q=0.5$
 - d. All of these
8. The distribution of wages of a group are normal with mean of $\bar{x} = 500$ and SD $\bar{s} = 100$. If the wages of 100 workers in the group are less than $\bar{x} = 430$, What is the total number of workers in the Group?
 - a. 413
 - b. 500
 - c. 600
 - d. 513
9. Find $P(x > 60)$ if mean of normal distribution is 50 and variance of 100.
 - a. 15.87%
 - b. 12.45%
 - c. 18.89%
 - d. 20.78%
10. If a random variable x follows normal distribution with a mean as 120 and standard deviation as 40, what is probability that x lies between 120 and 150?
 - a. 25.98%
 - b. 50.05%
 - c. 75.14%
 - d. 27.34%
11. If X is binomial variable with $n=20$. What is mean if distribution is symmetrical?
 - a. 5
 - b. 10
 - c. 2
 - d. 8
 - e. None of these
12. If X is Binomial variate with parameter 15 and $1/3$, What is the mode of the distribution?
 - a. 5 and 6
 - b. 5
 - c. 5.50
 - d. 6
13. If QD of a normal curve is 4.05 then mean deviation is
 - a. 5.26
 - b. 6.24
 - c. 4.24
 - d. 4.86
14. Standard deviation of poisson variate X is 2, What is $P(1.5 < X < 2.90)$
 - a. 0.231
 - b. 0.158
 - c. 0.15
 - d. 0.1465
15. If the mean of poisson variable X is 1, What is $P(X = \text{atleast } 1)$
 - a. 0.456
 - b. 0.821
 - c. 0.632
 - d. 0.254
 - e. None of these
16. If 1.5% of items produced by a manufacturing units are known to be defective, What is the probability that a sample of 200 items would contain no defective item?
 - a. 0.0500
 - b. 0.1497
 - c. 0.20
 - d. 0.0497
17. If the two quartiles of Normal Distribution are 14.6 and 25.4 respectively, what is the standard deviation of the distribution?
 - a. 9
 - b. 6
 - c. 10
 - d. 8

18. If 1% of Airline's flights suffer from a minor equipment failure in an Aircraft, what is the probability that there will be exactly two such failures in next 100 such flights?
a. 0.50 b. 0.184 c. 0.265 d. 0.256 e. None of these
19. When coin is tossed 10 times, then it is a case of
a. Normal distribution. b. Poisson distribution. c. Binomial distribution. d. None of these
20. If 50% of certain product have weight 60 kg or more whereas 10% have weight 55 kg or less. On the assumption of normality, what is the variance of the weight?
a. 15.0231 b. 9.00 c. 16.00 d. 22.68

Answers : DD-100

Qs.	Answer	Qs.	Answer
1	A	11	B
2	D	12	B
3	A	13	D
4	B	14	D
5	B	15	C
6	A	16	D
7	C	17	D
8	A	18	B
9	A	19	C
10	D	20	A