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100 MUST DO MCQS OF

CA FOUNDATION STATISTICS

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- Educator Dil Se ♡
- Qualified all CA levels in very first attempt
- My Aim is to remove Maths Phobia from commerce background students and make Stats and Maths as their strength to crack CA Exam
- Educator at Unacademy for CA Foundation Maths, LR and Stats and CA Intermediate Cost and Management Accounting

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MATHEMATICS			
Time Value of Money Part I	PLAY	Arithmetic Progression	PLAY
Time Value of Money Part II	PLAY	Geometric Progression	PLAY
Time Value of Money Part III	PLAY	AP and GP - Advance Problems	PLAY
Quiz - Time Value of Money	PLAY	AP and GP - Complete Quiz	PLAY
Ratio	PLAY	Quadratic Equation	PLAY
Proportion	PLAY	Other Equations	PLAY
Indices and Log (1.5 hrs)	PLAY	Matrices and Determinants	PLAY
Quiz - Ratio, Proportion, Indices, Log	PLAY	Quiz - Equations and Matrices	PLAY

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Permutations and Combinations Part I	PLAY	Sets	PLAY
Permutations and Combinations Part II	PLAY	Relations and Functions	PLAY
Permutations and Combinations Part III	PLAY		
Permutations and Combinations Part IV	PLAY		

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STATISTICS

Central Tendency Part I	PLAY	Quiz II	PLAY
Central Tendency Part II	PLAY	Quiz III	PLAY
Central Tendency Part III	PLAY	Probability Part I	PLAY
Disperion Part I	PLAY	Probability Part II	PLAY
Disperion Part II	PLAY	Probability Part III	PLAY
Quiz I	PLAY	Probability Part IV	PLAY
Correlation Part I	PLAY	Quiz IV	PLAY
Correlation Part II	PLAY	Theoretical Distribution Part I	PLAY
Regression Part I	PLAY	Theoretical Distribution Part II	PLAY
Regression Part I	PLAY	Quiz V	PLAY

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3. Cost of sugar in a month under the heads raw materials, labour, direct production and others were 12, 20, 35 and 23 units respectively. What is the difference between the central angles for the largest and smallest components of the cost of sugar?

(a) 72^{o} (b) 48^{o} (c) 56^{o} (d) 92^{o}

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7. 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 observations :	56	38	15	0

(a) 56 (b) 23 (c) 15 (d) 8

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15. The best method to collect data, in case of a natural calamity, is

(a) Personal interview (b) Indirect interview

(c) Questionnaire method (d) Direct observation method.

16. In case of a rail accident, the appropriate method of data collection is by

(a) Personal interview (b) Direct interview

(c) Indirect interview (d) All these.

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20. Internal consistency of the collected data can be checked when

(a) Internal data are given

(b) External data are given

(c) Two or more series are given

(d) A number of related series are given.

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25. For tabulation, 'caption' is

(a) The upper part of the table

(b) The lower part of the table

(c) The main part of the table

(d) The upper part of a table that describes the column and sub-column.

26. '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) All these.

(d) Left part of the table describing the rows.

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27. The entire upper part of a table is known as

(a) Caption (b) Stub

(c) Box head (d) Body.

28. The unit of measurement in tabulation is shown in

(a) Box head (b) Body

(c) Caption (d) Stub.

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35. Multiple line chart is applied for

(a) Showing multiple charts

(b) Two or more related time series when the variables are expressed in the same unit

(c) Two or more related time series when the variables are expressed in different unit

(d) Multiple variations in the time series.

36. Multiple axis line chart is considered when

(a) There is more than one time series (b) The units of the variables are different

(c) (a) or (b) (d) (a) and (b).

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46. Mutually exclusive classification

(a) Excludes both the class limits

(b) Excludes the upper class limit but includes the lower class limit

(c) Includes the upper class limit but excludes the upper class limit

(d) Either (b) or (c).

47. Mutually inclusive classification is usually meant for

(a) A discrete variable

(b) A continuous variable

(c) An attribute

(d) All these.

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51. length of a class is

(a) The difference between the UCB and LCB of that class

(b) The difference between the UCL and LCL of that class

(c) (a) or (b)

(d) Both (a) and (b).

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55. Mode of a distribution can be obtained from

(a) Histogram (b) Less than type ogives

(c) More than type ogives (d) Frequency polygon.

56. Median of a distribution can be obtained from

(a) Frequency polygon (b) Histogram

(c) Less than type ogives (d) None of these.

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14. Which of the following results hold for a set of distinct positive observations?

(a) AM ≥ GM ≥ HM

(b) HM ≥ GM ≥ AM

(c) AM > GM > HM

(d) GM > AM > HM

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19. Which of the following measure(s) satisfies (satisfy) a linear relationship between two variables?

(a) Mean (b) Median (c) Mode (d) All of these

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From the record on sizes of shoes sold in a shop, one can compute the following to determine the most preferred shoe size

a. Mean

b. Median

c. Mode

d. Range

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4. What is the GM for the numbers 8, 24 and 40?

(a) 24 (b) 12 (c) $8 \cdot \sqrt[3]{15}$ (d) 10

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7. If the AM and HM for two numbers are 5 and 3.2 respectively then the GM will be

(a) 16.00 (b) 4.10 (c) 4.05 (d) 4.00.

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The AM of 15 observations is 9 and the AM of first 9 observations is 11 and then AM of remaining observations is

a. 11

b. 6

c. 5

d. 9

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9. The third decile for the numbers 15, 10, 20, 25, 18, 11, 9, 12 is

(a) 13 (b) 10.70 (c) 11 (d) 11.50

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If there are two groups with n_1 and n_2 observations and H_1 and H_2 are respective harmonic means

a. $\dfrac{n_1H_1+n_2H_2}{n_1+n_2}$

b. $\dfrac{n_1H_1+n_2H_2}{H_1+H_2}$

c. $\dfrac{n_1+n_2}{n_1H_1+n_2H_2}$

d. $\dfrac{(n_1+n_2)(H_1H_2)}{n_1H_2+n_2H_1}$

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The harmonic mean of A and B is 1/3 and harmonic mean of C and D is 1/5. The harmonic mean of A, B, C and D is

a. 8/15

b. 1/4

c. 1/15

d. 5/3

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11. The average salary of a group of unskilled workers is ₹ 10,000 and that of a group of skilled workers is ₹ 15,000. If the combined salary is ₹ 12,000, then what is the percentage of skilled workers?

(a) 40% (b) 50% (c) 60% (d) none of these

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13. What is the HM of 1,1/2, 1/3,.....1/n?

(a) n (b) 2n (c) $\frac{2}{(n+1)}$ (d) $\frac{n(n+1)}{2}$

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14. An aeroplane flies from A to B at the rate of 500 km/hour and comes back from B to A at the rate of 700 km/hour. The average speed of the aeroplane is

(a) 600 km. per hour

(b) 583.33 km. per hour

(c) $100\sqrt{35}$ km. per hour

(d) 620 km. per hour.

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1. What is the value of mean and median for the following data:

Marks:	5–14	15–24	25–34	35–44	45–54	55–64
No. of Students:	10	18	32	26	14	10

(a) 30 and 28 (b) 29 and 30 (c) 33.68 and 32.94 (d) 34.21 and 33.18

Mean

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1. What is the value of mean and median for the following data:

Marks:	5–14	15–24	25–34	35–44	45–54	55–64
No. of Students:	10	18	32	26	14	10

(a) 30 and 28 (b) 29 and 30 (c) 33.68 and 32.94 (d) 34.21 and 33.18

Median

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12. For a moderately skewed distribution, which of he following relationship holds?

(a) Mean – Mode = 3 (Mean – Median)
(b) Median – Mode = 3 (Mean – Median)
(c) Mean – Median = 3 (Mean – Mode)
(d) Mean – Median = 3 (Median – Mode)

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12. If there are two groups with 75 and 65 as harmonic means and containing 15 and 13 observation then the combined HM is given by

(a) 65 (b) 70.36 (c) 70 (d) 71.

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2. What is the median for the following observations?

5, 8, 6, 9, 11, 4.

(a) 6 (b) 7 (c) 8 (d) None of these

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8. Which measure of dispersion is based on the absolute deviations only?

(a) Standard deviation
(b) Mean deviation
(c) Quartile deviation
(d) Range

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11. The appropriate measure of dispersion for open-end classification is

(a) Standard deviation (b) Mean deviation

(c) Quartile deviation (d) All these measures.

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18. The standard deviation of 10, 16, 10, 16, 10, 10, 16, 16 is

(a) 4 (b) 6 (c) 3 (d) 0.

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3. What is the coefficient of range for the following distribution?

Class Interval :	10-19	20-29	30-39	40-49	50-59
Frequency:	11	25	16	7	3

(a) 22 (b) 50 (c) 72.46 (d) 75.82

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11. What is the standard deviation of 5, 5, 9, 9, 9, 10, 5, 10, 10?

(a) $\sqrt{14}$ (b) $\frac{\sqrt{42}}{3}$ (c) 4.50 (d) 8

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12. If the mean and SD of x are a and b respectively, then the SD of $\frac{x-a}{b}$ is

(a) –1 (b) 1 (c) ab (d) a/b.

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20. The mean and SD for a, b and 2 are 3 and $\frac{2}{\sqrt{3}}$ respectively, The value of ab would be

(a) 5 (b) 6 (c) 11 (d) 3.

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9. If two samples of sizes 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) 5.00 (b) 5.06 (c) 5.23 (d) 5.35

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15. Which measure of dispersion is considered for finding a pooled measure of dispersion after combining several groups?

(a) Mean deviation
(b) Standard deviation
(c) Quartile deviation
(d) Any of these

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Coefficient of Quartile deviation is 1/4 then Q_3 / Q_1 is

a. 5/3

b. 4/3

c. 3/4

d. 3/5

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20. If all the observations are increased by 10, then

(a) SD would be increased by 10

(b) Mean deviation would be increased by 10

(c) Quartile deviation would be increased by 10

(d) All these three remain unchanged.

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7. The coefficient of mean deviation about mean for the first 9 natural numbers is

(a) 200/9 (b) 80 (c) 400/9 (d) 50.

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7. If P(A) = P(B), then

(a) A and B are the same events

(b) A and B must be same events

(c) A and B may be different events

(d) A and B are mutually exclusive events.

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12. If for two events A and B, $P(A \cap B) \neq P(A) \times P(B)$, then the two events A and B are

(a) Independent
(b) Dependent
(c) Not equally likely
(d) Not exhaustive.

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21. If p : q are the odds in favour of an event, then the probability of that event is

(a) $\frac{p}{q}$

(b) $\frac{p}{p+q}$

(c) $\frac{q}{p+q}$

(d) none of these.

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22. If P(A) = 5/9, then the odds against the event A is

(a) 5 : 9 (b) 5 : 4

(c) 4 : 5 (d) 5 : 14

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23. If A, B and C are mutually exclusive and exhaustive events, then P(A) + P(B) + P(C) equals to

(a) $\frac{1}{3}$

(b) 1

(c) 0

(d) any value between 0 and 1.

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26. P(A/B') is defined only when

(a) B is not a sure event

(b) B is a sure event

(c) B is an impossible event

(d) B is not an impossible event.

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34. If A and B are mutually exclusive events, then

(a) $P(A) = P(A-B)$.

(b) $P(B) = P(A-B)$.

(c) $P(A) = P(A \cap B)$.

(d) $P(B) = P(A \cap B)$.

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40. If all the values taken by a random variable are equal then

(a) its expected value is zero

(b) its standard deviation is zero

(c) its standard deviation is positive

(d) its standard deviation is a real number.

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3. What is the chance of getting at least one defective item if 3 items are drawn randomly from a lot containing 6 items of which 2 are defective item?

(a) 0.30 (b) 0.20

(c) 0.80 (d) 0.50

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8. A, B and C are three mutually exclusive and exhaustive events such that P (A) = 2 P (B) = 3P(C). What is P (B)?

(a) 6/11 (b) 3/11

(c) 1/6 (d) 1/3

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17. If P (A) = a, P (B) = b and P (P (A ∩ B) = c then the expression of P (A′ ∩ B′) in terms of a, b and c is

(a) 1 – a – b – c

(b) a + b – c

(c) 1 + a – b – c

(d) 1 – a – b + c

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21. If a random variable x assumes the values 0, 1 and 2 with probabilities 0.30, 0.50 and 0.20, then its expected value is

(a) 1.50 (b) 3

(c) 0.90 (d) 1

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7. A number is selected at random from the first 1000 natural numbers. What is the probability that the number so selected would be a multiple of 7 or 11?

(a) 0.25 (b) 0.32

(c) 0.22 (d) 0.33

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11. There are three persons aged 60, 65 and 70 years old. The survival probabilities for these three persons for another 5 years are 0.7, 0.4 and 0.2 respectively. What is the probability that at least two of them would survive another five years?

(a) 0.425 (b) 0.456

(c) 0.392 (d) 0.388

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20. The probability distribution of a random variable x is given below:

x :	1	2	4	5	6
P :	0.15	0.25	0.20	0.30	0.10

What is the standard deviation of x?

(a) 1.49 (b) 1.56

(c) 1.69 (d) 1.72

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12. The mean of a binomial distribution with parameter n and p is

(a) n (1– p). (b) np (1 – p). (c) np. (d) $\sqrt{np(1-p)}$.

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13. The variance of a binomial distribution with parameters n and p is

(a) $np^2 (1 - p)$. (b) $\sqrt{np(1-p)}$. (c) $nq (1 - q)$. (d) $n^2p^2 (1- p)^2$.

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18. The maximum value of the variance of a binomial distribution with parameters n and p is

(a) n/2. (b) n/4. (c) np (1 – p). (d) 2n.

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32. Area of the normal curve

(a) between $-\infty$ to μ is 0.50.

(b) between μ to ∞ is 0.50.

(c) between $-\infty$ to ∞ is 0.50.

(d) both (a) and (b).

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35. The mean deviation about median of a standard normal variate is

(a) 0.675 σ. (b) 0.675. (c) 0.80 σ. (d) 0.80.

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36. The quartile deviation of a normal distribution with mean 10 and SD 4 is

(a) 0.675. (b) 67.50. (c) 2.70. (d) 3.20.

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39. The interval $(\mu - 3\sigma, \mu + 3\sigma)$ covers

(a) 95% area of a normal distribution.

(b) 96% area of a normal distribution.

(c) 99% area of a normal distribution.

(d) all but 0.27% area of a normal distribution.

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4. If x is a binomial variate with parameter 15 and 1/3, what is the value of mode of the distribution?

(a) 5 and 6. (b) 5. (c) 5.50. (d) 6.

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7. If the overall percentage of success in an exam is 60, what is the probability that out of a group of 4 students, at least one has passed?

(a) 0.6525. (b) 0.9744. (c) 0.8704. (d) 0.0256.

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12. If 1.5 per cent 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) 0.05. (b) 0.15. (c) 0.20. (d) 0.22.

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16. What is the coefficient of variation of x, characterised by the following probability density function: $f(x) = \frac{1}{4\sqrt{2\pi}} e^{-(x-10)^2/32}$ for $-\infty < x < \infty$

(a) 50. (b) 60. (c) 40. (d) 30.

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21. If the quartile deviation of a normal curve is 4.05, then its mean deviation is

(a) 5.26. (b) 6.24. (c) 4.24. (d) 4.80.

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23. If the area of standard normal curve between z = 0 to z = 1 is 0.3413, then the value of ϕ (1) is

(a) 0.5000. (b) 0.8413. (c) –0.5000. (d) 1.

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15. In a sample of 800 students, the mean weight and standard deviation of weight are found to be 50 kg and 20 kg respectively. On the assumption of normality, what is the number of students weighing between 46 Kg and 62 Kg? Given area of the standard normal curve between $z = 0$ to $z = 0.20 = 0.0793$ and area between $z = 0$ to $z = 0.60 = 0.2257$.

(a) 250 (b) 244 (c) 240 (d) 260

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4. For a p x q bivariate frequency table, the maximum number of marginal distributions is

(a) p (b) p + q

(c) 1 (d) 2

5. For a p x q classification of bivariate data, the maximum number of conditional distributions is

(a) p (b) p + q

(c) pq (d) p or q

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8. What is spurious correlation?

(a) It is a bad relation between two variables.

(b) It is very low correlation between two variables.

(c) It is the correlation between two variables having no causal relation.

(d) It is a negative correlation.

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11. If the plotted points in a scatter diagram are evenly distributed, then the correlation is

(a) Zero
(b) Negative
(c) Positive
(d) (a) or (b).

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16. Pearson's correlation coefficient is used for finding

(a) Correlation for any type of relation

(b) Correlation for linear relation only

(c) Correlation for curvilinear relation only

(d) Both (b) and (c).

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18. 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.

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21. The covariance between two variables is

(a) Strictly positive

(b) Strictly negative

(c) Always 0

(d) Either positive or negative or zero.

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24. In case the correlation coefficient between two variables is 1, the relationship between the two variables would be

(a) $y = a + bx$

(b) $y = a + bx, b > 0$

(c) $y = a + bx, b < 0$

(d) $y = a + bx$, both a and b being positive.

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27. 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.

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30. What is the quickest method to find correlation between two variables?

(a) Scatter diagram
(b) Method of concurrent deviation
(c) Method of rank correlation
(d) Method of product moment correlation

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33. 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).

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35. The difference between the observed value and the estimated value in regression analysis is known as

(a) Error
(b) Residue
(c) Deviation
(d) (a) or (b).

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38. The two lines of regression become identical when

(a) $r = 1$ (b) $r = -1$

(c) $r = 0$ (d) (a) or (b).

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42. If the coefficient of correlation between two variables is 0.7 then the percentage of variation unaccounted for is

(a) 70%
(b) 30%
(c) 51%
(d) 49%

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6. 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

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11. 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 differences in ranks is 66, what is the number of students in the group?

(a) 10 (b) 9 (c) 8 (d) 11

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13. 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

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17. If the regression line of y on x and of x on y are given by $2x + 3y = -1$ and $5x + 6y = -1$ then the arithmetic means of x and y are given by

(a) (1, –1) (b) (–1, 1) (c) (–1, –1) (d) (2, 3)

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18. 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 (a) and (b) (d) none of these.

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19. Given the following equations: $2x - 3y = 10$ and $3x + 4y = 15$, which one is the regression equation of x on y ?

(a) 1st equation (b) 2nd equation (c) both the equations (d) none of these

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22. If the regression line of y on x and that of x on y are given by $y = -2x + 3$ and $8x = -y + 3$ respectively, what is the coefficient of correlation between x and y?

(a) 0.5 (b) $-1/\sqrt{2}$ (c) –0.5 (d) none of these

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1. What is the coefficient of correlation from the following data?

x:	1	2	3	4	5
y:	8	6	7	5	5

(a) 0.75 (b) –0.75 (c) –0.85 (d) 0.82

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9. What is the value of Rank correlation coefficient between the following marks in Physics and Chemistry:

Roll No.:	1	2	3	4	5	6
Marks in Physics:	25	30	46	30	55	80
Marks in Chemistry:	30	25	50	40	50	78

(a) 0.782 (b) 0.696 (c) 0.932 (d) 0.857

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For the set of observations {(1,2),(2,5),(3,7),(4,8),(5,10)} the value of Karl Pearson's Correlation Coefficient

a. 0.755

b. 0.655

c. 0.525

d. 0.985

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Find the coefficient of correlation

$2x+3y=2$

$4x+3y=4$

a. -0.71

b. 0.71

c. -0.5

d. 0.5

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16. Given the following data:

Variable:	x	y
Mean:	80	98
Variance:	4	9

Coefficient of correlation = 0.6

What is the most likely value of y when x = 90 ?

(a) 90 (b) 103 (c) 104 (d) 107

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7. Price relative is equal to

a) $\frac{\text{Price in the given year} \times 100}{\text{Price in the base year}}$

b) $\frac{\text{Price in the year base year} \times 100}{\text{Price in the given year}}$

c) Price in the given year × 100

d) Price in the base year × 100

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12. Weighted G.M. of relative formula satisfy _____test

a) Time Reversal Test
b) Circular test
c) Factor Reversal Test
d) none

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18. Index numbers are often constructed from the

a) frequency b) class c) sample d) none

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25. When the product of price index and the quantity index is equal to the corresponding value index then the test that holds is

(a) Unit Test
(b) Time Reversal Test
(c) Factor Reversal Test
(d) none holds

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30. The choice of suitable base period is at best temporary solution

(a) true (b) false (c) both (d) none

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38. _____ is concerned with the measurement of price changes over a period of years, when it is desirable to shift the base

(a) Unit Test
(b) Circular Test
(c) Time Reversal Test
(d) none

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40. The formula for conversion to current value

(a) Deflated value = $\frac{\text{Price Index of the current year}}{\text{previous value}}$

(b) Deflated value = $\frac{\text{current value}}{\text{Price Index of the current year}}$

(c) Deflated value = $\frac{\text{Price Index of the previous year}}{\text{previous value}}$

(d) Deflated value = $\frac{\text{Price Index of the previous year}}{\text{previous value}}$

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If Laspeyre's Index Number is 110 and Fisher's Ideal Index Number is 109. Then Paasche's Index Number

a. 118 *b. 110*

c. 109 *d. 108*

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The Index Number of prices at place in the year 2008 is 225 with 2004 as the base then there is

a. 125% increase

b. 225% increase

c. 100% increase

d. 25% increase

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*The cost-of-living index numbers in years **2015** and **2018** were **97.5** and **115** respectively. The salary of a worker in **2015** was **Rs. 19,500**. How much additional salary was required for him in **2018** to maintain the same standard of living as in **2015**?*

a. 3000

b. 4000

c. 3500

d. 4500

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The prices and quantities of 3 commodities in base and current years are as follows:

p_0	p_1	q_0	q_1
12	14	10	20
10	8	20	30
8	10	30	10

The Laspeyre's price index is

a. 118.13 *b. 107.14*

c. 120.10 *d. None*

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If the 1970 index with base 1965 is 200 and 1965 index with base 1960 is 150, what will be index of 1970 on base of 1960?

a. 700

b. 300

c. 500

d. 600

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3) The graph of time series is called:

(a) Histogram (b) Straight line

(c) Historigram (d) Ogive

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5) The secular trend is measured by the method of semi-averages when:

(a) Time series based on yearly values

(b) Trend is linear

(c) Time series consists of even number of values

(d) None of them

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9) In time series seasonal variations can occur within a period of:

(a) Four years (b) Three years

(c) One year (d) Nine years

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12) Most frequency used mathematical model of a time series is:

(a) Additive model (b) Mixed model

(c) Multiplicative model (d) Regression

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18) Indicate which of the following an example of seasonal variations is:

(a) Death rate decreased due to advance in science

(b) The sale of air condition increases during summer

(c) Recovery in business

(d) Sudden causes by wars

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23) Increased demand of admission in the subject of computer in Uttar Pradesh is:

(a) Secular trend
(b) Cyclical trend
(c) Seasonal trend
(d) Irregular trend

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26) In moving average method, we cannot find the trend values of some:

(a) Middle periods
(b) End periods
(c) Starting periods
(d) Between extreme periods

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