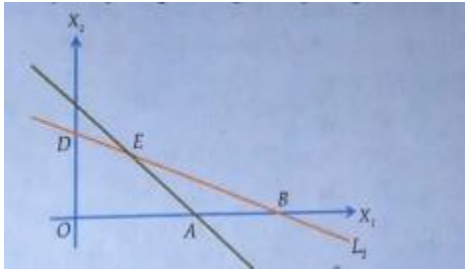


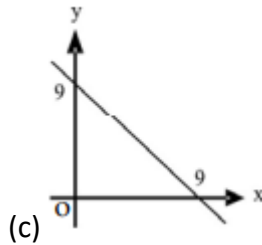
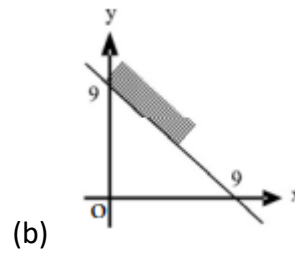
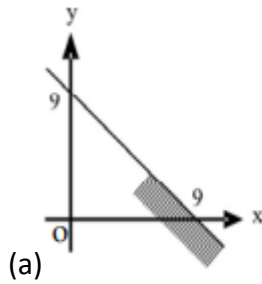
TOPIC: Chapter 1 to 5

1. The common region represented by the following in equalities

$$L_1 = X_1 + X_2 < 4; L_2 = 2X_1 + X_2 > 6$$



- (a) $\triangle ABC$
(b) Outside of O AB
(c) $\triangle BCE$
(d) $\triangle ABE$
2. Two numbers are in the ratio 2 : 3 and the difference of their squares is 320. The numbers are
(a) 12, 18
(b) 16, 24
(c) 14, 21
(d) None of these
3. The solution of the equations $x + 2 > 0$ and $2x - 6 > 0$ is
(a) $(-2, \infty)$
(b) $(3, \infty)$
(c) $(-\infty, -2)$
(d) $(-\infty, -3)$
4. Find the effective rate of interest at 10% p.a. when interest is payable quarterly
(a) 10.38%
(b) 5%
(c) 5.04%
(d) 4%
5. The graph to express the inequality $x + y \leq 9$ is



(d) None of these

6. How many numbers can be formed with the help of 2,3,4,5,6,1 which is not divisible by 5 given that is a five-digit number and digits number and digits are not repeating?
- (a) 1200
 (b) 400
 (c) 600
 (d) 1400
7. The ratio compounded of 2 : 3, 9 : 4, 5 : 6 and 8 : 10 is
- (a) 1 : 1 (b) 1 : 5 (c) 3 : 8 (d) none of these
8. A fertilizer company produces two type of fertilizers called grade I and grade II. Each of these types is processed through a critical chemical plant unit. The plant has maximum of 180 hours available in a week. Manufacturing one bag of grade II fertilizer requires 10 hours in the plant. Express this using linear inequalities.
- (a) $2x_1 + 5x_2 \leq 180$
 (b) $4x_1 + 10x_2 > 180$
 (c) $2x_1 + 5x_2 > 180$
 (d) $4x_1 + 10x_2 \leq 180$
9. The rules are representations demand that employed should employ not more than 8 experienced leads to 1 fresh one and then fact can be expressed as
- (a) $y \geq x/8$
 (b) $8y \leq x$
 (c) $8y = x$
 (d) $Y = 8x$
10. What will be the population after 3 years when present population is 25000, if the population increases at the rate 3% in I year, 4% in II year and 5% in III year.

(a) 28119

(b) 29118

(c) 27000

(d) 30000

11. In how many ways can 5 people occupy 8 vacant chairs?

(a) 5,720

(b) 6,720

(c) 7,720

(d) None

12. The number of arrangements of the letters in the word 'FAILURE', so that vowels are always coming together is

a) 576

b) 575

c) 570

d) none of these

13. Find the effective rate of interest at 10% p.a when the interest is payable quarterly.

(a) 10.38%

(b) 5%

(c) 5.04%

(d) 4%

14. The present value of scooter is Rs.7290. The rate of depreciation is 10%. What was the value 3 years ago?

(a) 10000

(b) 10010

(c) 9990

(d) 12000

15. $\frac{a}{4} = \frac{b}{5} = \frac{c}{9}$ then $\frac{a+b+c}{c}$ is :

(a) 4

(b) 2

(c) 7

(d) none of these

16. if $3x + 2 < 2x + 5$ and $4x - 5 \geq 2x - 3$, then x can take from the following values

(a) 3

(b) -1

(c) 2

(d) -3

17. 8 people are sitting in a row in a meeting among them the president and the vice president are to be seated always in the center. What is the number of arrangement?

(a) $7!2!$

(b) $6!2!$

(c) $6!$

(d) $1!$

18. The rational root of the equation $0 = 2p^3 - p^2 - 4P + 2$ is:

(a) 2

(b) -2

(c) $\frac{1}{2}$

(d) $-\frac{1}{2}$

19. The number of 4 digit numbers greater than 5,000 can be formed out of the digits 3,4,5,6 and 7(No. digit is repeated). The number of such is

a) 72

b) 27

c) 70

d) none of these

20. Mr. X and Mr. Y enter into a railway compartment having six vacant seats. The number of ways in which they can occupy the seats is

(a) 25

(b) 31

(c) 32

(d) 30

21. The cab bill is partly fixed and varies on the distance covered. For 456 km the bill is Rs. 8252, for 484 km the bill is Rs. 8728. What will the bill be for 500 km?

(a) Rs. 8876

(b) Rs.9156

(c) Rs.9472

(d) Rs.9000

22. If the value of 'k' is _____, if the root of the following equation:

$$(k-4)x^2 - 2kx + (k+5) = 0 \text{ are}$$

(a) 18

(b) 20

(c) 19

(d) 21

23. Find the effective rate of interest at 10% p.a when the interest is payable quarterly.

(e) 10.38%

(f) 5%

(g) 5.04%

(h) 4%

24. ${}^n P_r = 720$ and ${}^n C_r = 120$ then value of r is

(a) 4

(b) 5

(c) 3

(d) 6

25. The number ways in which 4 person can occupy 9 vacant seats is

(a) 6048

(b) 3024

(c) 1512

(d) 4536

26. On the average experienced person does 6 units work while A person 2 units of work daily but employer has to maintain as output of at least 24 unit of per day. This situation can be expressed as.

(a) $6x+2y \leq 24$

(b) $6x+2y=24$

(c) $6x+2y \geq 24$

(d) $6x2y \neq 4$

27. 40 feet rope is cut into 2. One piece is 18 feet longer than the other. What is the length of the shorter piece?

(a) 11

(b) 12

(c) 18

(d) 22

28. Find the value of n if $(n+1)! = 42(n-1)!$

(a) 6

(b) -7

(c) 7

(d) -6

29. If ${}^n P_3 : {}^n P_2 = 3 : 1$, then n is equal to

a) 7

b) 4

c) 5

d) none of these

30. The time by which a sum of money would treble itself at 8% p. a C. I is

(a) 14.28 years

(b) 14 years

(c) 12 years

(d) none of these

31. A company produces two products A and B, each of which requires processing in two machines. The first machine can be used at most for 60 hours, the second machine can be used at most for 40 hours. The product A requires 2 hours on machine one and one hour on machine two. The product B requires one hours on machine one and two hours on machine two. Express above situation using linear inequalities

(a) $2x + y \leq 60$ and $x + y \geq 40$

(b) $2x + y \geq 60$ and $x + y \geq 40$

(c) $2x + y \leq 60$ and $x + y \leq 40$

(d) $2x + y \geq 60$ and $x + y \leq 40$

32. The value of $4/(32)^{1/5}$ is

(a) 8

(b) 2

(c) 4

(d) none of these

33. The equation $3x^3 + 5x^2 = 3x + 5$ has got 3 roots and hence the factors of the left-hand side of the equation $3x^3 + 5x^2 - 3x - 5 = 0$ are

a) $x - 1, x - 2, x - 5/3$

b) $x - 1, x + 1, 3x + 5$

c) $x + 1, x - 1, 3x - 5$

d) $x - 1, x + 1, x - 2$

34. ${}^n C_1 + {}^n C_2 + {}^n C_3 + {}^n C_4 + \dots$

(a) $2^n - 1$ (b) 2^n (c) $2^n + 1$ (d) none

35. The age of a person is twice the sum of the ages of his two sons and five years ago his age was thrice the sum of their ages. Find his parents

(a) 60 years

(b) 52 years

(c) 51 years

(d) 50 years

36. Rs. 200 is invested at the end of each month in an account paying interest 6% per year compounded monthly. What is the future value of this annuity after 10th payment?

(a) Rs. 2044

(b) Rs. 12044

(c) Rs. 2040

(d) Rs. 12000

37. The region indicated by the shading in the graph is expressed by the inequalities

(a) $x_1 + x_2 \leq 2; x_1 + x_2 \geq 4; x_1 \geq 0, x_2 \geq 0$

(b) $x_1 + x_2 \leq 2; x_1 - x_2 + x_2 \leq 4; x_1 \geq 0, x_2 \geq 0$

(c) $x_1 + x_2 \geq 2; x_1 + x_2 \geq 4; x_1 \geq 0, x_2 \geq 0$

(d) $x_1 + x_2 \leq 2; x_1 + x_2 \geq 4; x_1 \geq 0, x_2 \leq 0$

38. Division of 324 between X and Y is in the ratio 11: 7. X & Y would get rupees (ICAI)

- (a) (204, 120)
- (b) (200, 124)
- (c) (180, 144)
- (d) none of these

39. Solve $x^2+3x^2-x-3=0$ given that the roots are in arithmetical progression

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

40. X, Y, Z together starts a business, if X invests 3 times as much as Y invests and Y invests two third of what Z invests, then the ratio capitals of X, Y, Z is

- (a) 3:9:2
- (b) 6:3:2
- (c) 3:6:2
- (d) 6:2:3

41. $\log 6 + \log 5$ is expressed as

- (a) $\log 11$
- (b) $\log 30$
- (c) $\log 5/6$
- (d) none of these

42. The rules and regulations demand that the employer should employ not more than 5 experienced hands to 1 fresh one and this fact can be expressed as

- (a) $x/5 \geq y$
- (b) $x \leq 5y$
- (c) $x \geq 5y$
- (d) none of these

43. Suppose you have decided to make a Systematic Investment Plan (SIP) in a mutual fund with Rs. 1,00,000 every from today for next 10 years where you get return at the rate of

10% per annum compounded annually. What is the future value of this annuity? Given

$$1.1^{10} = 2.59374$$

(a) Rs. 1735114

(b) Rs. 1753411

(c) Rs. 1735411

(d) Rs. 1753114

44. The value of $\left(1 - \sqrt[3]{0.027} \left(\frac{5}{6}\right) \left(\frac{1}{2}\right)^2\right)$ is

(a) 11/16 (b) 13/16 (c) 15/16 (d) 1

45. Net Present value ≥ 0 , then

(a) Accept the proposal

(b) Reject the proposal

(c) Not feasible

(d) None of these

46. The solution of the equation $x+2>0$ and $2x-6>0$ is

(a) $(-2, \infty)$

(b) $(3, \infty)$

(c) $(-\infty, -2)$

(d) $(-\infty, -3)$

47. A person wants to lease out a machine costing Rs. 500000 for a 10 year period. It has fixed a rental of Rs. 51272 per annum payable annually starting from the end of the year. Suppose rate of interest is 10% per annum compounded annually on which money can be invested. To whom this agreement is favourable?

(a) Favour of lessee

(b) Favour of lessor

(c) Not for both

(d) can't be determined

48. A person has assets worth Rs. 1,48,200. He wishes to divide it amongst his wife, son and daughter in the ratio 3: 2: 1 respectively. From this asset, the share of his son will be:

(a) Rs. 24,700

(b) Rs. 49,400

(c) Rs. 74,100

(d) Rs. 37,050

49. Five times of a positive whole number is 3 less than twice the square of the number. The number is

a) 3

b) 4

c) -3

d) 2

50. The effective rate of interest corresponding a nominal rate of 7% p.a. convertible quarterly.

(a) 7%

(b) 7.5%

(c) 5%

(d) 7.18%