

NATIONAL MANAGEMENT COLLEGE, THUDUPATHI.

PAPER – 3: BUSINESS MATHEMATICS, LOGICAL REASONING AND STATISTICS

Time Allowed : ½ hour

Maximum Marks: 25

1) Find the root of the equations. if $4x \cdot 8y = 128$ and $\frac{3^x}{27^y} = \frac{1}{3}$

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

2) The three roots of equation is. $x^3 + 9x^2 - x - 9 = 0$

- (a) 1,-1,-9 (b) 1,-1,9
(c) 1,1,9 (d) -1,-1,-9

3) Find the value of K so that $x = 2$ is a root of the equation $3x^2 - 2kx + 5 = 0$

- (a) 17/4 (b) 4/17
(c) -17/4 (d) -4/17

4) The solutions of the set of inequations $2x + y \geq 12, 5x + 8y \geq 74, x + 6y \geq 24,$
 $x \geq 0, y \geq 0$

- a) $(24,0), (\frac{126}{11}, \frac{23}{11}), (2,8), (0,12)$ b) $(24,0), (2,8), (0,12), (\frac{126}{11}, \frac{23}{11})$
c) $(8, 4), (2, 8), (0, 12), (0, 24)$ c) $(8,4), (0, 0) (0,6) (2,0)$

5) Find the condition that one roots is double the other of $ax^2 + bx + c = 0$

- (a) $2b^2 = 3ac$ (b) $b^2 = 3ac$
(c) $2b^2 = 9ac$ (d) $2b^2 > 9ac$

6) The solution set of the in equation $x + 2 > 0$ and $2x - 6 > 0$ is

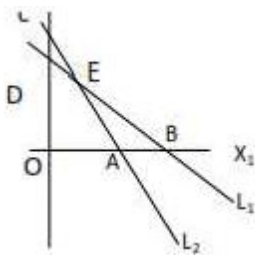
- a) $(3, \infty)$ b) $(-2, -\infty)$ c) $(-\infty, 2)$ d) $(-\infty, -3)$

7) If the square of the number exceeds twice of the number by 15, then the number that satisfy the condition is

- a) 5 b) 3 c) -5 d) 15

8) The common region represented by the following in equalities

$$L_1 = X_1 + X_2 \leq 4; \quad L_2 = 2X_1 + X_2 \geq 6$$



(a) OABC

(b) Outside of OAB

(c) Δ BCE

(d) Δ ABE

9) The highest degree of the linear equation is:

a) 0

b) 1

c) 2

d) 4

10) The cost of two oranges and 3 apple is Rs.28 . If the cost of an apple is doubled then the cost of 3 oranges and 5 apples is Rs. 25 . The original cost of 7 oranges and 4 apple is ,

a)59

b)47

c)71

d) 63

11) On Solving the Inequalities $5x + y \leq 100$, $x + y \leq 60$, $x \geq 0$, $y \geq 0$, we get the following situation:

(a) (0, 0), (20, 0), (10, 50) & (0, 60)

(b) (0, 0), (60, 0), (10, 50) & (0, 60)

(c) (0, 0), (20, 0), (0, 100) & (10, 50)

(d) None of these

12) When two roots of quadratic equation are $\alpha, 1/\alpha$ then what will be the quadratic equation:

(a) $\alpha x^2 - (\alpha^2 + 1)x + \alpha = 0$

(b) $\alpha x^2 - \alpha^2 x + 1 = 0$

(c) $\alpha x^2 - (\alpha^2 + 1)x + 1 = 0$

(d) None of these

13) If $2x^2 - (a + 6)^2x + 12a - 0$, then the roots are

(a) 6 and a

(b) 4 and a^2

(c) 3 and 2a

(d) 6 and 3a

14) Solving equation $m + \sqrt{m} = 6/25$ the value of m works out to

(a) 1/25

(b) 2/25

(c) 3/25

(d) 1

15) Solve $4x+5 > 5x-13$

- a) $x > -18$ b) $x > 5$ or $x < -13$ c) $x > -13$ or $x < 5$ d) $x > 18$

16) Find the range of $\frac{ab}{c}$ if $1 < a < 3, 0 < b < 2$ and $-2 < c < -1$,

- a) $(-6,0)$ b) $(0,6)$ c) $(-3,0)$ d) $(-6,-3)$

17) There are three cities: A,B and C. Three friends are discussing the population (in millions) of the three cities. One says A has 9 million people. The second says: B has as many people as A and C combined. The third says: The number of people in A added to half of the number of people in B is the number of people in C. What is the total number of people (in millions) in all three cities combined?

- a)48 b)54 c)63 d)72

18)

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