QUESTION PAPER

Standard: 11TH & 12TH

Sub: Mathematics

1. Given y=sin 2x, dx/dy at x = 3 is most nearly

    (a)0.9600   (b) 0.9945   (c) 1.920   (d)1.989

2. If log 27 = 1.431, then the value of log 9 is:

    (a) 0.934   (b) 0.945   (c) 0.954   (d) 0.958

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    (a) 0.934   (b) 0.945   (c) 0.954   (d) 0.958

4. Which term of the A. P.: 5, 11, 17, ... is 119 ?

    (a) 18   (b) 19   (c) 20   (d) 21

5. The 'n', A. M's between 20 and 80 are such that the ratio of the first mean and the last mean is 1 : 3. Find the value of n.

    (a)   10
    (b)   8
    (c)   11
    (d)   19

6. A box contains 5 green, 4 yellow and 3 white balls. Three balls are drawn at random. What is the probability that they are not of same color.

    (a)52/55   (b) 3/55   (c) 41/44   (d) 3/44

7. Which of the following statements is not correct?

    (a) log10 10 = 1

    (b) log (2 + 3) = log (2 x 3)

    (c) log10 1 = 0

    (d) log (1 + 2 + 3) = log 1 + log 2 + log 3

8. If log10 5 + log10 (5x + 1) = log10 (x + 5) + 1, then x is equal to:

    (a) 1   (b) 3   (c) 5   (d) 10

9. If log10 5 + log10 (5x + 1) = log10 (x + 5) + 1, then x is equal to:

    (a) 1   (b) 3   (c) 5   (d) 10

10. The common difference of an A. P. is 3 and the 15th term is 37. Find the first term.

(a)   10
(b)   -5
(c)   -10
(d)   5

11. The 35th term of an A. P. is 69. Find the sum of its 69 terms.

　　(a) 4010　　　　　　(b) 4761　　　　　　(c) 4671　　　　　　(d) 4100

12. Is 600 a term of the A. P.: 2, 9, 16, ...?

　　(a) 86　　　　(b) 87　　　　(c) 88　　　　(d) no term in the given above

13. If the letters of the word SACHIN are arranged in all possible ways and these words

　　are written out as in dictionary, then the word 'SACHIN' appears at serial number

　　(a) 601　　(b) 600　　　　(c) 603　　　　(d) 602

14. 120,99,80,63,48,?

　　(a) 35　　　　　(b) 38　　　　　(c) 39　　　　　(d) 40

15. From a pack of 52 cards, 1 card is drawn at random. Find the probability of a face card
　　drawn.

　　(a) 4/13　　　　　　(b) 1/52　　　　　　(c) ¼　　　　(d) None of above

16. In the quadratic equation $(2a - 3)x^2 + ax + a - 5 = 0$, the value of a can never be

　　(a) 3/2　　　　(b) 0　　　　　(c) 5　　　　(d) None of these

17. The quadratic equation whose roots are –2 and 4 is given by

　　(a) $x^2 - 2x - 8 = 0$

　　(b) $x^2 - 2x + 8 = 0$

　　(c) $x^2 + 2x + 8 = 0$

　　(d) None of these

18. Bag contain 10 back and 20 white balls, One ball is drawn at random. What is the probability
　　that ball is white

　　(a) 1　　　　　　(b) 23　　　　(c) 13　　　　(d) 43

19. A speaks truth in 75% of cases and B in 80% of cases. In what percentage of cases are they
　　likely to contradict each other, narrating the same incident?

　　(a) 30%　　(b) 35%　　　　　　(c) 40%　　　　　　(d) 45%

20. If two roots of quadratic equation $ax^2 + bx + c = 0$ are a, b, then the roots of the quadratic equation $ax^2 - bx + c = 0$ are given by

       (a) a, -b   (b) –a, –b   (c) -a, b   (d) None of these

21. In the series 2, 6, 18, 54,……..what will be the 8th term?

       (a) 4370   (b) 4374   (c) 7443   (d) 7434

22. Choose the missing terms

R, U, X, A, D, ?.

(a) F
(b) G
(c) H
(d) I

23. If p, q be two positive numbers, then the number of real roots of quadratic equation $px^2 + q|x| + 5 = 0$ is

       (a) 1   (b) 0   (c) 2   (d) 4

24. 45, 54, 47, ?, 49, 56, 51, 57, 53.

       (a) 48   (b) 50   (c) 55   (d) none of these

25. 0.5, 0.55, 0.65, 0.8, ?

       (a) 0.9   (b) 0.82   (c) 1   (d) 0.95

26. If p and q are roots of the quadratic equation $x^2 + mx + m^2 + a = 0$, then the value of $p^2 + q^2 + pq$ is

       (a) 0   (b) a   (c) –a   (d) ± m2

_____END_____

ANSWERS

1-c

2- c

3- c

4- c

5- c

6- c

7-b

8- b

9- b

10- b

11- b

12- d

13- a

14- a

15- a

16- a

17- a

18- b

19- b

20- b

21- b

22- b

23- b

24- c

25- c

26- c