

- I. Four alternatives are given for each of the following questions / incomplete statements. Only one of them is correct or most appropriate. Choose the correct alternative and write the complete answer along with its letter

8 × 1 = 8

- If $T_n = n^2 + 3$ then the value of T_3 is
(A) 6 (B) 9
(C) 12 (D) 27.
- Arithmetic mean of 2 and 8 is
(A) 5 (B) 10
(C) 16 (D) 3.2.
- If the probability of winning a game is 0.3, then what is the probability of losing it?
(A) 0.1 (B) 0.3
(C) 0.7 (D) 1.3.
- The degree of the polynomial $2x^2 - 4x^3 + 3x + 5$ is
(A) 0 (B) 1
(C) 2 (D) 3.
- The distance between the origin and the point (4, -3) is
(A) 1 unit (B) 5 units
(C) 7 units (D) -12 units.
- The slope of the straight line whose inclination is 60° is
(A) 0 (B) $\frac{1}{\sqrt{3}}$
(C) $-\sqrt{3}$ (D) $\sqrt{3}$.

(SPACE FOR ROUGH WORK)

7. If $\sin \theta = \frac{3}{5}$, then the value of cosec θ is

(A) $\frac{4}{5}$

(B) $\frac{5}{3}$

(C) $\frac{4}{3}$

(D) $\frac{5}{4}$

8. If the standard deviation of a set of scores is 1.2 and their mean is 10, then the coefficient of variation of the scores is

(A) 12

(B) 0.12

(C) 20

(D) 120.

II. Answer the following :

$6 \times 1 = 6$

9. If $U = \{1, 2, 3, 4, 5\}$ and $A = \{2, 4, 5\}$ then find A' .

10. The H.C.F. of 12 and 18 is 6. Find their L.C.M.

11. If $f(x) = 2x^2 + 3x + 2$ then find the value of $f(2)$.

12. Two circles of diameters 10 cm and 4 cm, touch each other externally. Find the distance between their centres.

13. State Pythagoras theorem.

14. Write the formula to find the total surface area of a cylinder.

III. 15. Calculate the maximum number of diagonals that can be drawn in an octagon using the suitable formula. 2

16. Prove that $2 + \sqrt{5}$ is an irrational number. 2

17. There are 50 wrist watches in a box. Out of these 50 wrist watches are found defective. One watch is drawn randomly from the box. Find the probability that wrist watch chosen is a defective watch. 2

(SPACE FOR ROUGH WORK)