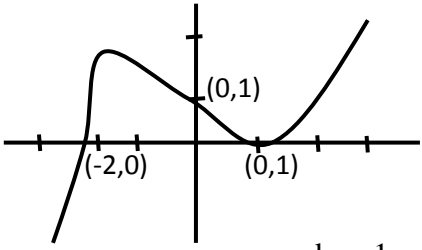
SECTION – B

1. The graph of cubic polynomial
   $Y = an^3 + bn^2 + cn + d$
   is shown below. Find the coefficients a, b, c & d



   a. 0 b. 1
   c. $\frac{1}{2}$ d. $\frac{3}{2}$

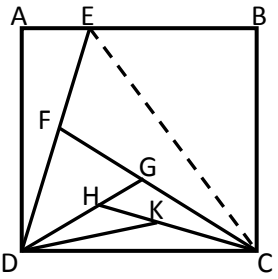
2. Divide 28 into 2 parts such a way that 6/5 of one part is equal 2/3 of the other
   a. $\sqrt{9} - \sqrt{7}$ b. $\sqrt{125}\, x\, \sqrt{5}$
   c. None of these d. Both (a) and (b)

3. x and y are two non-negative numbers such that 2x + y = 10. The sum of the maximum and minimum values of (x + y) is
   a. 6 b. 9
   c. 15 d. 10

4. Three-digit number formed by using digits 0, 1, 2 and 5 (without repetition) are written on different on each slip, and put in a bowl. One slip is drawn at random from the bowl. The probability that the slip bears a number divisional by 5 is
   a. $\frac{5}{9}$ b. $\frac{2}{3}$
   c. $\frac{4}{9}$ d. $\frac{1}{3}$

5. The value of $\frac{2\,(\sqrt{2}+\sqrt{6}}{3\sqrt{2+\sqrt{3}}} + \sqrt{2+\sqrt{3}} + \sqrt{2-\sqrt{3}}$ is
   a. $\frac{3+4\sqrt{6}}{3}$ b. $\frac{4+3\sqrt{6}}{3}$
   c. $\frac{3+4\sqrt{6}}{4}$ d. $\frac{4-3\sqrt{6}}{3}$

6. In the figure, the area of square ABCD is 4 cm^2 and E any point of AB. F, G, H and K are the mid-point of DE, CF, DG and CH, respectively. The area of Δ



a. $\frac{1}{4}$ CM^2 b. $\frac{1}{8}$ CM^2
c. $\frac{1}{32}$ CM^2 d. $\frac{1}{16}$ CM^2

7. The mean proportional between $(2 + \sqrt{3})$ and $(8 - \sqrt{48})$ is
a. 2 b. 2 : 3
c. 3 d. 3 : 1

SECTION – C

8. If a carton containing a dozen mirrors is dropped which of the following cannot be the ratio of broken mirror to unbroken mirror ?
a. 3 : 2 b. 1 : 2
c. 1 : 1 d. 5 : 1

9. From a window (h m above from the ground) of a house in a street, the angle of elevation and depression of the top and the foot of another house on the opposite side of the street are θ and Φ, respectively. Then, the height of the opposite house is
a. h tan θ cot Φ b. h (tan θ cot Φ + 1)
c. h (cot θ tan Φ + 1) d. h cot θ tan Φ

10. Out of the letters E, T and N, a 3-letter word is formed at random using all the 3 letters. What is the probability that the word formed is TEN?
a. 1/6 b. 1/2
c. 1/3 d. 2/3

11. Four angles of a 8-sided figure are each 154°. If the remaining four angles are equal, then the measure of each angle is

a. 100° b. 116°

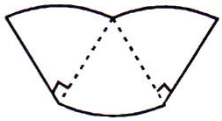
c. 110° d. 120°

12. How many key strokes are needed to type all the integers from 1 to 1000?

a. 2892 b. 2891

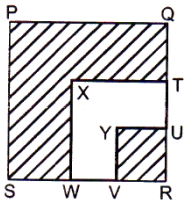
c. 2894 d. 2893

13. A circle with area 36π is cut into quarters and three of the pieces are arranged as shown. What is the perimeter of the resulting figure.



a. $6\pi + 12$ b. $9\pi + 12$

c. $9\pi + 18$ d. $6\pi + 18$



a. 2 : 1 b. 7 : 3

c. 7 : 4 d. 4 : 7

14. It is given that the difference between the zeroes of $4x^2 - 8\,kx + 9$ is 4 and k > then k = ?

a. $\frac{1}{2}$ b. $1\frac{}{2}$

c. $3\frac{1}{2}$ d. $\frac{5}{2}$