SECTION – I

I. Answer all the following questions   **7×1=7**

   Each question carries 1 mark

1. Write the formula to find the curved surface, area of cone and explain each term?

2. Find the mean of first five prime numbers?

3. A ladder touches the wall 4m above the ground the distance between foot of the ladder and wall is 3m then find the length of the ladder?

4. Find the value of 4 $\sin^2 \theta$ + Tan^2 45°?

5. If Δ ABC ~ Δ PQR, LB = 40° and Lc = 60° then find the value of LP + LQ = ?

6. Find the probability of getting prime number when a die is rolled once?

7. The length of the shadow of a pillar is equal to its height. Find the angle of elevation of the sun?

SECTION – II

I. Answer all the following questions   **6 × 2 = 12**

   Each question carries 2 mark

8. If A, B and C are interior ingles of triangle ABC, then show that $\sin \dfrac{B+C}{2} = \cos \dfrac{A}{2}$?

9. The ratio of areas of two similar triangles is 9 : 4 find the rations of their medians?

10. Write the formula of median in a grouped data and explain the letters in it?

11. A bag contains lemon flavoured candies only ma---- out one candy without looking in to the bag what probability that she takes out?

    i.   An orange flavoured candy ?

    ii.   A lemon flavoured candy ?

12. A large balloon has been tied a rope and it is floating in the air a person has observed the balloon from the top of a building at angle of elevation of Q_1 and foot of the rope at angle of depression of Q_2 the height of the building is 'h' feet Draw the diagram for this data?

13. Evalute sin 60° cos 30° + sin 30° cos 60°. What is the value of sin(60° + 30°) what can you conclude?

SECTION – 3

1. In this section, every question has internal choice
2. Answer any one alternative
3. Each question carries 4 marks.

14. A box contains 5 red marbles and 8 white marbles and 4 green marbles. One marble is taken out of the box at random. What is the probability that the marble taken out will be (i) Red (ii) white (iii) Not green?

(OR)

Prove that $(\text{Sin A} + \text{Cosec A})^2 + (\text{Cos A} + \text{Sec A})^2 = 7 + \text{Tan}^2 A + \cot^2 A$

15. A survey conducted on 20 households in a locality by a group of students resulted in the following frequency table for the number of family members in a house hold

Family Size	1-3	3-5	5-7	7-9	9-11
Number of families	7	8	2	2	1

Find the mode of the data ?

(OR)

Draw a circle with radius 3 cm and construct a pair of tangents from a point 8 cm away from the center?

16. A tree breaks due to storm and the broken part bends so that the top of the tree touches the ground by making 30° angle with the ground the distance between the foot of the tree and the top of the tree on the ground is 6cm Find the height of the tree before falling down?

(OR)

A storage tank consists of a circular cylinder with a hemisphere stuck on either end. If the external diameter of the cylinder be 1.4 cm and its length be 8m. Find the cost of pointing it on the outside at rate of 20 m²?

17. The following table gives production yield per head of wheat of 100 farms of a village

Production yield (guiltless)	50-55	55-60	60-65	65-70	70-75	75-80
Number of farmers	2	8	12	24	38	16

Change the distribution to a more than type distribution and draw its -----?

OR

Construct a triangle of slides 4 cm, 5cm, and 6cm, and then construct a triangle similar to it, whose side are $\frac{2}{3}$ of the corresponding sides of the first triangle?

SECTION – IV

Time : 30 minuets   Marks : 5

Instructions:

   i)   Write the answers to the questions in this Part-B on the question paper itself and attach it the answer book of Part-A

   ii)   Answer all the questions

   iii)   Each question carries ½ mark

   iv)   Answers are to be written in question paper only

   v)   Marks will not be awarded in any case of over writing, rewriting or erased answer.

Write the CAPITAL LETTERS (A, B, C, D) showing the correct answer for the following questions in the brackets provided against them?

                                                                                   10 × ½ = 5

1.   In $\triangle ABC$, $AC^2 = AB^2 + BC^2$ the $\angle B =$ _____   (   )

       a) 60°   b) 90°   c) 36°   d) 100°

2.   How many tangents Can be drawn to a circle from an external points   (   )

       a) 1   b) 3   c) 9   d) 2

3.   If slant height of cone is 41cm, it's height is 40cm then radius is   (   )

       a) 9cm   b) 1cm   c) 41 cm   d) 6cm

4.   If $Cos7A = sin (A – 6°)$ then A is   (   )

       a) 7   b) 14   c) 12   d) 6

5. Tan θ + cot θ = 2, where 0° < θ < 90°, then value of θ is ___   (   )

    a) 45°   b) 30°   c) 60°   d) 90°

6. The probability of an event that cannot happen is   (   )

    a) 0   b) 1   c) < 1   d) > 1

7. Another name of "Bandhayam" theorem is ___   (   )

    a) Thal's theorem   b) Pythagorus theorem

    c) Lythagorus theorem   d) None

8. If P(E) = 0.05, What is the probability of not 'E' __   (   )

    a) 0.05   b) 0.5   c) 0.95   d) 9.5

9. Tan θ is not defined if θ = ____   (   )

    a) 50°   b) 60°   c) 90   d) None

10. Which of the following sides are not of a right triangle   (   )

    a) 9, 15, 12   b) 9, 5, 7   c) 400, 300, 500   d) 2, √5, 1