

SRI SARASWATHI SHISHU MANDIR

MATHEMATICS

Paper - I

(English Version)
(Parts A and B)

Time: 3 Hours **Maximum Marks:** 60

Roll Number: _____ Class: 10

GENERAL INSTRUCTIONS

1. Read the question paper carefully and understand.
2. Answer the questions under Part - A in the answer sheet provided.
3. Part - A contains three Sectons : Section - I, II and III.
4. Part - B answers should be written in the given brackets and attach it to the Part - A answer sheet.
5. Write the answers by following the instructions given in each Section.

PART - A

Time: 1 Hours **Maximum Marks:** 60

Section - A

(6 × 2 = 12 Marks)

Instructions:

- Answer all the questions
- Each question carries 2 marks.
- Answer all the questions in 2 to 3 lines.

1. Define the angle of elevation.

2. Define the probability of an event E.

3. What is the probability of a sure event and of an impossible event?

4. Define the mode of ungrouped data.

5. Write the formula for finding the mean of grouped data by the direct method.

6. Define the angle of depression.

Section - B

(6 × 4 = 24 Marks)

Instructions:

- Answer all the questions.
- Each question carries 4 marks.

7. A tower stands vertically on the ground. From a point 20 m away from its foot, the angle of elevation of the top is 60°. Find the height of the tower.

8. A boy standing on top of a 10 m building observes the angle of depression of a car to be 30°. Find the distance of the car from the base of the building.

9. The shadow of a tower is 40 m longer when the sun's altitude is 30° than when it is 60°. Find the height of the tower.

10. In triangle ABC, DE || BC, with AD = 2 cm, DB = 3 cm and AC = 7.5 cm. Find AE.

11. The areas of two similar triangles are 25 cm^2 and 36 cm^2. Find the ratio of their corresponding sides.

12. In ΔABC, DE || BC and AD/DB = 3/4. Find AE/EC.

Section - C

(4 × 6 = 24 Marks)

Instructions:

- Answer any 4 of the following questions.
- Each question carries 6 marks.

13. State and prove the Pythagoras theorem using the concept of similar triangles.

14. State and prove the Basic Proportionality Theorem (Thales Theorem).

15. Sangeeta and Reshma play a tennis match. The probability of Sangeeta winning the match is 0.62. Find the probability of Reshma winning, and explain why these two events are complementary.

16. A box contains 90 discs numbered 1 to 90. If one disc is drawn at random, find the probability that it bears (i) a two-digit number (ii) a perfect square number (iii) a number divisible by 5.

17. Two dice are thrown together. Find the probability that the sum of the numbers on the two dice is (i) 7 (ii) a prime number (iii) greater than 10.

18. A metallic sphere of radius 4.2 cm is melted and recast into the shape of a cylinder of radius 6 cm. Find the height of the cylinder.
