Kamini Learning Skills R & D Centre, LLP, Pune
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Subject : Maths I | **Preliminary Exam : 1** | **Marks : 40**

Std : 10th | **Time : 2 Hrs**

Q. 1. Attempt any FIVE sub-questions from the following. **05**

i) Find the values of **a** and **b** for quadratic equation $2x^2 - 3x + 9 = 0$

ii) Sum of two natural numbers is 23. Write the equation using two variables.

iii) The following data shows number of children in each family living in Siddhivinayak Society. Find the mean of the following data. 2, 1, 0, 4, 3, 2, 2, 2, 1, 2, 1, 2.

iv) Dx = 39, D = 13 , Find the value of x for a pair of simultaneous equations in two variables.

v) Write the formula to find measure of central angle requires for drawing a pie diagram

vi) A die is thrown. Write the sample space and number of sample points.

Q. 2. Attempt any FOUR sub-questions from the following. **08**

i) Find the value of discriminant and write the nature of the roots for the following quadratic equation: $x^2 - 3x + 2 = 0$

ii) A coin is tossed twice. Write the probability getting both heads.

iii) Solve the following simultaneous equations. $x + y = 4$; $2x - 5y = 1$

iv) $(x + 3)(x - 7) = 0$; Find the values for x.

v) For a frequency distribution the values of mean and mode are 164 and 170 respectively. Find it's median.

vi) Complete the following table for drawing pie- diagram.

Age Group	5 – 15	15 – 35	35 – 65	65 and above
Population	30	40	25	5
Measure of Central Angle				

Q. 3. Attempt any THREE sub-questions from the following. **09**

i) Find the sum of all natural numbers between 1 to 200 which are divisible by 5.

ii) Solve for x : $\frac{}{} - \frac{}{} = -1$; $\frac{}{} + \frac{}{} = 10$

iii) Solve the following quadratic equation using formula method: $2x^2 - 8x + 3 = 0$

v) A committee of 2 is to be formed from three boys and three girls. Find the probability that it has at the Most 1 girl.

v) The following table shows the frequency distribution of number planted by students in the school. Find the modal number (mode) of trees planted.

No. of trees planted	0 – 10	10 – 20	20 – 30	30 – 40	40 - 50
No. of Students	30	70	100	70	40

Q. 4. Attempt any TWO sub-questions from the following. **08**

i) A man borrows Rs. 2000 and agrees to repay with a total interest of Rs.340 in 12 monthly installments, each installment being less than the preceding one by Rs. 10. Find the amounts paid in the first and last installments.

ii) In a class of 25 students with roll numbers 1 to 25, a student is picked up at random to answer a question. Find the probability that the roll number of the selected student is either a multiple of 5 or of 6.

iii) The length of a rectangular field is – times its breadth. Leaving 5 m border from all sides as a walking track, the inner rectangular field is kept reserved for children to play. If the area of the track is 900 m^2, find the length and breadth of the field.

Q. 5. Attempt any TWO sub-questions from the following. **10**

i) A manufacturer of T.V. sets produced 6000 units in 3rd year and 7000 units in the 7th year. Assuming the production uniformly increases by a fixed number every year, find:

a) the production in 1st year.

b) the total production in 7 years.

c) the production in 10th year.

ii) For the given following data draw a histogram and find the modal income.

Income	400 – 500	500 – 600	600 – 700	700 – 800	800 – 900
No. of workers	8	12	16	8	5

iii) In a cricket match between Raigad and Pune teams the sum of – rd of the runs made by Raigad team and – th of the runs made by Pune team is 137. If Raigad team made runs just sufficient to win the match, then how many runs are made by Raigad team?