

Mathemagica[®]

TEST – STANDARD – 10TH GSEB

Chapters: **Triangles, Probability and Statistics**



Total Marks: **50**

Duration of Test: **120 Minutes.**

Important Points:

1. Maintain Sequential order while writing the paper.
2. Use pencils wherever necessary.
3. Draw Diagrams wherever necessary.

A. THEOREMS**[5 mark each]**

- a. Fundamental Theorem of Proportionality
- b. Ratios of Areas of Similar Triangles are proportional to square of their corresponding sides.

B. Solve the following questions:**1. Write down the following formulas and explain them: 5**

- a. Direct Method of finding Mean.
- b. Assumed Mean Method
- c. Step Deviation Method
- d. Formula to find Mode
- e. Formula to find Median

2. Find Mean, Median and Mode and Compare: 5

If the median of the distribution given below is 28.5, find the values of x and y.

Class interval	0-10	10-20	20-30	30-40	40-50	50-60	Total
Frequency	5	X	20	15	Y	5	60

3. Find the median of the following distribution: 4

Wages (in Rs)	200-300	300-400	400-500	500-600	600-700
No. of Labourers	3	5	20	10	6

4. The marks in science of 80 students of class X are given below. Find the mode of these marks obtained by the students in science. **4**

Marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100
Freq.	3	5	16	12	13	20	5	4	1	1

5. The following is the distribution of height of students of a certain class in a certain city. **4**

Height(in cms)	160-162	163-165	166-168	169-171	172-174
No. of students	15	118	142	127	18

Find the average height of maximum number of students.

6. Find Mean using Step Deviation Method: **4**

Class-interval	0-30	30-60	60-90	90-120	120-150	150-180
Frequency	12	18	22	24	17	7

7. Find Mean using Step Deviation Method: **4**

Classes	0-50	50-100	100-150	150-200	200-250	250-300
Frequency	10	15	30	35	25	15

8. A bag contains 6 red balls, 8 white balls, 5 green balls and 3 black balls. One ball is drawn at random from the bag. Find the probability that the ball drawn is: (i) white (ii) red or black (iii) not green (iv) neither white nor black. **2**

9. It is known that a box of 200 electric bulbs contains 16 defective bulbs. One bulb is taken out at random from the box. What is the probability that the bulb drawn is (i) defective (ii) non-defective? **2**

10. Cards marked with numbers 5 to 50 are placed in a box and mixed thoroughly. A card is drawn from the box at random.

Find the probability that the number on the taken out is (i) a prime number less than 10 (ii) a number which is perfect square. **2**

11. Find the probability of getting 53 Fridays in a leap year. **2**

12. Two dice are thrown at the same time. Find the probability that sum of two numbers appearing on the top of the dice is more than 9. **2**