

15/12/2023

MICRO TEST 1 (2024-25)
Subject : MATHEMATICS
Class- X

Time : 2 hrs.
 Date : 1.7.24

M.M. : 50

Name..... Harshet..... Roll No. 18..... Class. X..... Section B.....

General Instructions :-

- 1) All questions are compulsory.
- 2) This paper contains 4 sections.

Section A contains 5 questions of 1 mark each.

Section B contains 6 questions of 2 marks each.

Section C contains 5 questions of 3 marks each.

Section D contains 2 case based questions having 3 sub parts of 1 mark, 2 mark, 1 mark respectively.

Section E contains 2 questions of 5 marks each.

Que.						Marks												
	SECTION-A																	
1.	The ratio of HCF to LCM of the least composite number and the least prime number is :	(a) 1:2	(b) 2:1	(c) 20	(d) 25													
2.	For the following distribution, what is the upper limit of median class :	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Class</td><td>0-5</td><td>5-10</td><td>10-15</td><td>15-20</td><td>20-25</td></tr> <tr> <td>Frequency</td><td>10</td><td>15</td><td>12</td><td>20</td><td>9</td></tr> </table>					Class	0-5	5-10	10-15	15-20	20-25	Frequency	10	15	12	20	9
Class	0-5	5-10	10-15	15-20	20-25													
Frequency	10	15	12	20	9													
	(a) 10	(b) 15	(c) 20	(d) 25														
3.	The zeroes of the quadratic polynomial $3x^2 - 48$ are	<p>(a) both +ve (b) one +ve & one -ve (c) both -ve (d) both equal</p>																
	<p>Directions for Q4 & Q5 Choose the correct option for the Assertion (A) - Reason (R) statement</p>																	
	<p>(a) Both A & R are correct & R is the correct explanation of A. (b) Both A & R are correct but R is not the correct explanation of A.</p>																	

(c) A is true but R is false.

(d) A is false but R is true.

4. A : The distance of the point P (6, -6) from the origin is 6 units.

R : The distance between two points A (x_1, y_1) & B (x_2, y_2) is given by

$$AB = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

5. A : The HCF of two numbers is 16 and their product is 3072, then their LCM = 192.

R : If a & b are two positive integers, then $HCF \times LCM = a \times b$

SECTION-B

6. On a morning walk, three persons step off together and their steps measure 40 cm, 42 cm and 45 cm respectively. What is the minimum distance each should walk, so that each can cover the same distance in complete steps?

7. Find the coordinates of a point P on x-axis which is equidistant from two points A(-2, 0) & B(6, 0)

8. If the product of zeroes of the polynomial $ax^2 - 6x - 6$ is 4, find the value of a. Find the sum of zeroes of the polynomial.

9. If α and β are the zeroes of the quadratic polynomial $f(x) = x^2 - 3x + 2$, find the value of $\alpha^2 + \beta^2$

10. Find the coordinates of a point A, where AB is a diameter of the circle with centre (-2, 2) and B is a point with coordinates (3, 4)

11. The weight of coffee in 70 packets are shown in the following table :

Weight (in g)	200-201	201-202	202-203	203-204	204-205	205-206
No. of packets	12	26	20	9	2	1

find the modal weight

SECTION-C

12. Prove that $\sqrt{5}$ is irrational.

13. Find the zeros of $4\sqrt{3}x^2 + 5x - 2\sqrt{3}$ and verify the relationship between

the zeroes and coefficients of the polynomials.

14. Form a quadratic polynomial whose zeroes are $\frac{3-\sqrt{3}}{5}$ & $\frac{3+\sqrt{3}}{5}$

15. Find LCM & HCF of 867 & 255 and verify that LCM x HCF = Product of two numbers.

16. Find mean by assumed mean method :

Class Interval	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100
Frequency	8	7	12	23	11	13	8	6	12

SECTION-D

17. Data of height of Class X students was collected & organised as the following frequency distribution table.

Height (in cm)	140-145	145-150	150-155	155-160	160-165	165-170
Frequency	5	15	25	30	15	10

(i) What is the lower limit of median class?

(ii) What is the value of median height?

OR

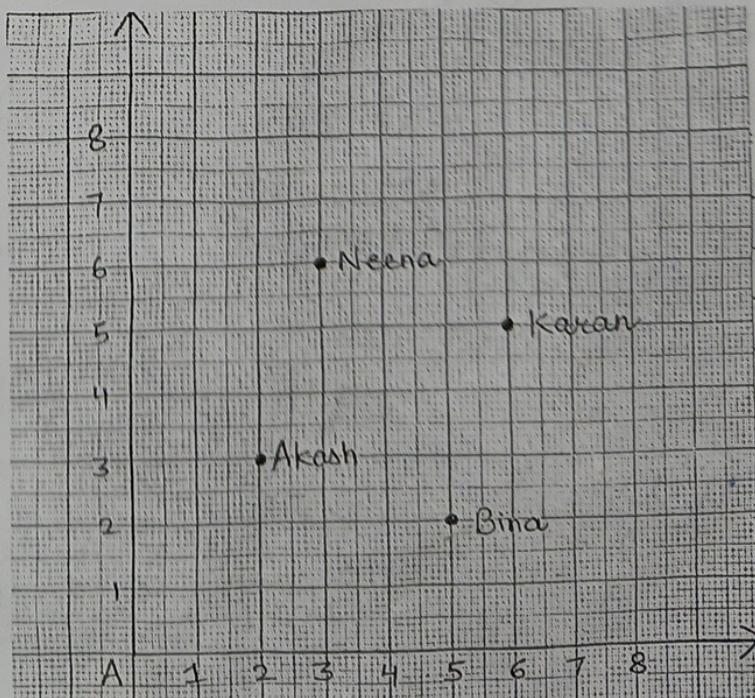
What is the value of modal height?

(iii) What is the class mark of class interval 155-160?

18. Karan went to the lab near to his house for blood test along with his family members. The seats in waiting area occupied by his family are shown in the graph.

(i) What are the coordinates of the seat of Akash?

(ii) What is the distance



2. All questions are compulsory

between the seats of Neena & Bina?

OR

What is the distance between the seats of Bina & Karan?

(iii) What will be the coordinates of a point exactly between Akash and Bina where a person can be seated?

SECTION-E

19. (i) Show that 9^n can never end with digit 0 for any natural number n .

(ii) Find the value of k for which the quadratic polynomial

$3x^2 + (2k+1)x - (k+5)$ has sum of zeroes as half of their product

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

Class Interval	0-10	10-20	20-30	30-40	40-50	50-60	Total
Frequency	5	x	20	15	y	5	60
	4	2.5	30	35	40	45	