



AN EDUCATIONAL INSTITUTE

SUBJECT: MATHS

DATE : 25/11/24

MAX. MARKS : 30

DURATION : 60 min

PBMT – 05
 UNIT - NUMBER SYSTEM
 Real numbers ,
 UNIT - COORDINATE GEOMETRY
 Co-ordinate geometry

General Instruction:

This Question Paper has 5 Sections A-E.

1. **Section A** has 6 MCQs carrying 1 mark each.
2. **Section B** has 2 questions carrying 02 marks each.
3. **Section C** has 2 questions carrying 03 marks each.
4. **Section D** has 1 questions carrying 04 marks each.
5. **Section E** has 2 questions carrying 05 marks each .

Draw neat figures wherever required. Take $\pi = 22/7$ wherever required if not stated.

SECTION – A

Questions 1 to 6 carry 1 mark each.

1. If the distance between the points $(8,p)$ and $(4,3)$ is 5 units, then value of p is
 (a) 6 (c) both (a) and (b)
 (b) 0 (d) none of these
2. What is the HCF of the least prime number and the least composite number
 (a) 1 (b) 2 (c) 3 (d) 4
3. A line intersects the y -axis and x -axis at the points P and Q , respectively. If $(2,-5)$ is the midpoint of PQ , then the coordinates of P and Q are, respectively
 (a) $(0, -5), (2, 0)$ (b) $(0, 10), (-4, 0)$
 (c) $(0, 4), (-10, 0)$ (d) $(0, -10), (4, 0)$
4. The ratio between the LCM and HCF of 5, 15 and 20.
 (a) 1:12 (b) 12 : 11 (c) 14 : 1 (d) 12 : 1
5. The points which divides the line segment of points $P(-1, 7)$ and $(4, -3)$ in the ratio of 2: 3 is :
 (a) $(-1, 3)$ (b) $(-1, -3)$ (c) $(1, -3)$ (d) $(1, 3)$
6. **ASSERTION:** 5 is an example of a rational number.
REASON: The square root of all positive integers is irrational numbers.
 (a) Both assertion (A) and reason (R) are true and assertion reason R is the correct explanation of assertion A.
 (b) Both assertion A and reason R are true but reason R is not the correct explanation of assertion A
 (c) Assertion A is true but reason R is false.
 (d) Assertion A is false but reason R is true

SECTION – B

Questions 7 to 8 carry 2 mark each.

7. The LCM of two numbers is 9 times their HCF. The sum of LCM and HCF is 500. Find their HCF.

8. Find the largest number which divides 245 and 1037 ,leaving remainder 5 in each case.

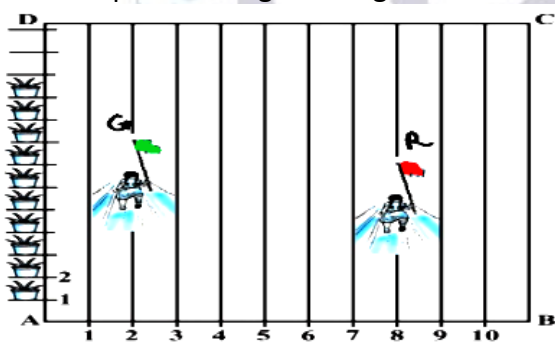
SECTION – C
Questions 9 to 10 carry 3 mark each.

9. If the midpoint of the line joining (3,4) and (k,7) is (x,y) and lying on the line $2x + 2y+1=0$, find the value of k.

10. Determine the ratio in which the line $3x + y - 9 = 0$ divides the line segment joining the points (1, 3) and (2, 7). Also, find the coordinates of the point of division.

SECTION – D
Questions 11 carry 4 mark each.

11. .In order to conduct Sports Day activities in your School, lines have been drawn with chalk powder at a distance of 1 m each, in a rectangular shaped ground ABCD, 100 flower pots have been placed at a distance of 1 m from each other along AD, as shown in given figure below. Niharika runs $\frac{1}{4}$ th the distance AD on the 2nd line and posts a green flag. Preet runs $\frac{1}{5}$ th distance AD on the eighth line and posts a red flag. 1. Find the position of green flag .



- (i) What is the distance between both the flags?
- (ii) If Rashmi has to post a blue flag exactly halfway between the line segment joining the two flags, where should she post her flag?
- (iii) If Joy has to post a flag at one-fourth distance from green flag , in the line segment joining the green and red flags, then where should he post his flag?

SECTION – E
Questions 12 to 13 carry 5 mark each

12. a)If coordinates of two adjacent vertices of a parallelogram are (3, 2), (1, 0) and diagonals bisect each other at (2, -5), find the coordinates of other two vertices.

b) Find the value of x for which the distance between (x, 7) and (-1, -5) is 13 units.

13. If (- 3,2), (1, -2) and (5, 6) are the mid-points of the sides of a triangle, find the coordinates of the vertices of the triangle.

End

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