

P-2

PT-2 2025-26
 CLASS – XI(Set-1)
 SUBJECT – MATHEMATICS (041)

Time Allowed : 90 MIN.

Maximum Marks:40

General Instructions:

This Question paper contains - five sections A, B, C, D and E. Each section is compulsory.

Section A has 5MCQ's and 01 Assertion-Reason based questions of 1 mark each.

Section B has 3VeryShortAnswer(VSA)-type questions of 2 marks each.

Section C has 3ShortAnswer(SA)-type questions of 3marks each.

Section D has 3LongAnswer(LA)-type questions of 5marks each.

Section E has 1 source based/case based/passage based/integrated units of assessment (4 marks each) with sub parts.

SECTION A(1x6=6)**(Multiple Choice Questions)**

Each question carries 1 mark

Q.1. In ellipse $\frac{x^2}{16} + \frac{y^2}{9} = 1$ coordinates of vertices is

(a) $(\pm 4, 0)$ (b) $(0, 0)$ (c) $(\pm 3, 0)$ (d) $(\pm 9, 0)$

Q.2. If a line makes an angle of 45° with positive direction of x axis ,its slope is

(a) 0 (b) 1 (c) -1 (d) none

Q.3. The equation of a line parallel to $x+y=5$ and passes through $(3,3)$ is

(a) $x+y=6$ (b) $x+y=7$ (c) $x+y=8$ (d) None

Q.4. The product of 5 terms of G.P whose 3rd term is 2 is

(a) 5^2 (b) 2^5 (c) 3^3 (d) 3^5

Q.5. Common ratio of G.P sequence is $\sqrt{2}, \sqrt{4}, \sqrt{8}, \dots$

(a) 2 (b) 16 (c) $\sqrt{2}$ (d) 8

ASSERTION – REASON BASED QUESTIONS

In the following questions, a statement of assertion (A) is followed by a statement of Reason (R). Choose the correct answer out of the following choices.

(a) Both A and R are true and R is the correct explanation of A.
 (b) Both A and R are true and R is the not the correct explanation of A.
 (c) A is true but R is false.
 (d) A is false but R is true.

Q6. Assertion (A): The slope of a line parallel to x-axis is zero

Reason (R): A line parallel to x axis does not intersect x axis

SECTION-B(2x3=6)

Q.7. Find the equation of the parabola which is symmetric about the X -axis, and passes through the point (2,3).

Q.8. Find the distance of the point (3,-5) from the line $3x-4y-26=0$

Q.9. Insert two numbers between 3 and 81 so that the resulting sequence is in G.P

SECTION – C(3x3=9)

Q.10: Find the image of the point (3,8) in the line $x+y=5$

Q.11: Find the area of the triangle formed by the lines joining the vertex of the parabola $y^2 = 20x$ to the ends of its latus rectum

Q.12: Find the sum of the series up to n terms: $0.6+0.66+0.666+\dots\dots$

SECTION – D(5x3=15)

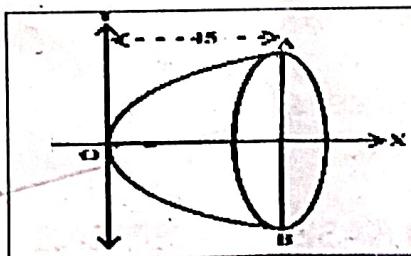
Q.13. Find the equation of the circle passing through the points (2,-2), (3,4) and whose centre is on the line $x+y=2$.

Q.14: Prove that the product of the lengths of the perpendiculars drawn from the points $(\sqrt{a^2-b^2}, 0)$ and $(-\sqrt{a^2-b^2}, 0)$ to the line $bx\cos C + a\sin C = ab$ is b^2

Q.15: The sum of two numbers is 6 times their geometric mean show that the numbers are in the ratio $(3+\sqrt{8}):(3-\sqrt{8})$

SECTION – E(4x1=4)

Q.16. The focus of a parabolic mirror as shown in Fig. is at a distance of 5 cm from its vertex and the mirror is .45 cm deep



Based on the above information answer the following:

I) What is the equation of the above parabolic section----- (1)

II) What is the length of distance AB?----- (1)

III) What is the coordinate of focus point of the parabolic mirror? ----- (2)

OR

What is the coordinate of point A of the parabolic mirror?