Pharmaceutical Technology
Brainware University
Barasat, Kolkata-700125

BRAINWARE UNIVERSITY

Term End Examination 2024-2025
Programme – B.Pharm-2024
Course Name – Remedial Mathematics
Course Code - BP106RMT
(Semester I)

Full Marks : 35 **Time : 1:30 Hours**

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A
(Short Answer Type Questions) 5 x 5=25

1. If $A = \begin{bmatrix} 2 & -3 & -5 \\ -1 & 4 & 5 \\ 1 & -3 & -4 \end{bmatrix}$, $B = \begin{bmatrix} -1 & 3 & 5 \\ 1 & -3 & -5 \\ -1 & 3 & 5 \end{bmatrix}$, identify the matrix AB+A. (5)

2. Let $f(x) = \begin{cases} x, & 0 < x < 1 \\ 2 - x, & 1 \le x \le 2 \\ x - x^2, & x > 2 \end{cases}$. Examine that $f(x)$ is discontinuous at $x = 2$. (5)

3. Identify the area of the triangle with vertices $A(1,1,2)$, $B(2,3,5)$ and $C(1,5,5)$. (5)

4. If $f(x) = x^2 - 3x + 4$, write the value of x for which $f(x) = f(x+1)$. (5)

OR

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If f(x) $= x^2 - 3x + 4$, write the value of x for which $f(x) = f(2x + 1)$. (5)

5. Identify the value of the limit: $\lim_{x \to 0} \frac{(1-cos2x).\sin 5x}{x^2 sin3x}$. (5)

OR

Identify the value of the limit: $lim_{x \to 0} \frac{x^2}{e^x - x - 1}$. (5)

Group-B

(Long Answer Type Questions) 10 x 1=10

6. Solve the differential equation: $\frac{dy}{dx} = \frac{1+y^2}{1+x^2}$. (10)

OR

Write the following rational function in terms of partial fractions: $\frac{x^2-3x+1}{(x-1)^2(x-2)}$. (10)

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