P. RAMI REDDY MEMORIAL COLLEGE OF PHARMACY

(AUTONOMOUS)

Awarding University: JNTU Anantapur, Anantapuramu. Approved by PCI, New Delhi & Govt. of A.P.
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Code: 25BP106RMT **R25**

B.Pharm I Year I Semester (R25) Regular Examinations March 2026

REMEDIAL MATHEMATICS

(B.Pharmacy)

Time: 3 hours Max. Marks: 70

PART – A

(Compulsory Question)

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1		Answer the following: (10 X 02 = 20 Marks)			
	(a)	If $\frac{5x-4}{(x-2)(x+1)} = \frac{A}{x-2} + \frac{B}{x+1}$. Find A and B.	C117.1	I	2M
	(b)	Determine the value of the following logarithms: (i) $\log_{10} 1000$ (ii) $\log_c \sqrt{c}$	C117.1	V	2M
	(c)	If $A = \begin{bmatrix} -2 & 3 \\ 1 & 2 \end{bmatrix}$ and $B = \begin{bmatrix} -1 & 0 \\ 1 & 2 \end{bmatrix}$, then find $(A+2B)^T$.	C117.2	I	2M
	(d)	If $\begin{vmatrix} x+2 & 3 \\ x+5 & 4 \end{vmatrix} = 3$, find the value of x.	C117.2	I	2M
	(e)	Find the derivative of $e^x + 5^x + 3\sqrt{x}$.	C117.3	I	2M
	(f)	Find the points of maxima and minima of a function $y = 2x^3 - 3x^2 + 6$.	C117.3	I	2M
	(g)	In which quadrant the following points lie (i) $A = (-3,5)$ (ii) $B = (2,7)$ (iii) $C = (-2,-6)$ (iv) $D = (4,-2)$.	C117.4	IV	2M
	(h)	Find the equation of the straight line which makes an angle of $45°$ with $X-axis$ and an intercept -3 on the $Y-axis$.	C117.4	I	2M
	(i)	Evaluate $\int \left(4e^x + 15 - \frac{1}{6x}\right) dx$.	C117.5	V	2M
	(j)	Solve $\frac{dy}{dx} = \frac{x}{y}$.	C117.5	III	2M

PART – B

(Answer all the questions: 05 X 10 = 50 Marks)

2	(a)	Resolve $\frac{x}{(x-1)(x^2+1)^2}$ into partial fractions.	C117.1	III	7M
	(b)	Show that $\lim_{x\to 0} \frac{\sqrt{1+x}-1}{x} = \frac{1}{2}$.	C117.1	II	3M
		OR			
3	(a)	Resolve $\frac{1}{(x+1)^3(x-2)}$ into partial fractions.	C117.1	III	7M
	(b)	Find the value of $\frac{1}{\log_{ab} abc} + \frac{1}{\log_{bc} abc} + \frac{1}{\log_{ca} abc}$.	C117.1	II	3M

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4	(a)	If $A = \begin{pmatrix} 1 & -2 & 3 \\ -4 & 2 & 5 \end{pmatrix}$ and $B = \begin{pmatrix} 1 & 3 \\ -1 & 0 \\ 2 & 4 \end{pmatrix}$. Then compute $3A + 4B^T$.	C117.2	III	5M
	(b)	If $A = \begin{bmatrix} -1 & -1 \\ 2 & -2 \end{bmatrix}$. Show that $A^2 + 3A + 4I = 0$.	C117.2	II	5M
		OR			
5		Solve the system of equations by matrix inversion method: $x - y + 3z = 5$ $4x + 2y - z = 0$ $x + 3y + z = 5$.	C117.2	III	10M
6	(a)	Differentiate $\log(\cot x)$ with respect to x.	C117.3	IV	5M
	(b)	If $xy = ae^x + be^{-x}$, prove that $xy_2 + 2y_1 - xy = 0$.	C117.3	V	5M
		OR			
7	(a)	Find $\frac{d}{dx}\left(\frac{x^3-2x+3}{\sqrt{x}}\right)$.	C117.3	I	5M
	(b)	Find $\frac{d}{dx}\left(\frac{\tan x}{x \log x}\right)$.	C117.3	I	5M
8	(a)	Find the value of x, if the distance between the points $(x, -1)$ and $(3,2)$ is 5.	C117.4	I	5M
	(b)	Find the ratio in which the point $(-3, p)$ divides the line segment joining the points $(-5, -4)$ and $(-2,3)$. Hence find the value of p.	C117.4	I	5M
		OR			
9	(a)	Find the equation of the line joining the points $(3, -1)$ and $(2, 3)$. Also find the equation of the other line which is perpendicular to this line and passing through the point $(5,2)$.	C117.4	III	5M
	(b)	Show that the line joining $(5, 6)$ and $(2, 3)$ is parallel to the line through the points $(9, -2)$ and $(6, -5)$.	C117.4	II	5M
10	(a)	Evaluate $\int \sqrt{(1 - \sin 2x)}\, dx$.	C117.5	V	5M
	(b)	Solve $\frac{dy}{dx} = 1 + x + y + xy$.	C117.5	III	5M
		OR			
11		Solve $(2x - y + 1)\, dx + (2y - x - 1)\, dy = 0$.	C117.5	III	10M

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