Nov-21

Roll Number ---------- **(Total Number of Questions 09)** **(Total number of Printed Pages 01)**

Programme	B. Pharmacy
Semester	1st
Subject	Remedial Mathematics
Subject Code	BP106RMT
Paper ID	74650
Time	1.5 Hours
Maximum Marks	35
Link to upload answer sheet	https://forms.gle/zc3yrPbRBif4LxeP6

Instructions to Candidates: *No supplementary/continuation sheet will be issued to the candidates. Answer the questions precisely.*
Section A consists of Two questions carrying 10 marks each (Long Answer); attempt any **ONE.*
***Section B consists of Seven questions carrying 5 marks each (Short Answer); attempt any **FIVE**.*

Section A (1 X 10 = 10)

1.	Solve by using matrix method 3x-2y+3z=8, 2x+y-z=1, 4x-3y+2z=4
2.	Solve the differential equation, $\frac{dy}{dx} - 2y = e^{3x}$

Section B (5 X 5 = 25)

3.	Evaluate $\lim_{x\to 0} \frac{\tan x - sinx}{x^3}$
4.	Resolve into Partial Fraction $\frac{7x-25}{x^2-7x+12}$
5.	Verify Cayley Hamilton Theorem for the Matrix A= $\begin{pmatrix} 8 & 7 \\ 5 & 4 \end{pmatrix}$
6.	Find the value of k for which the points are collinear (1,5),(k,1),(11,7).
7.	Find the maximum and minimum value of function $3x^3+4x+5$
8.	Solve $\int x^2 \, sinx \, dx$
9.	Find the inverse Laplace of $\frac{4s+9}{s^2+16}$

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270123

Roll Number ---------- (Total Number of Questions 09) (Total number of Printed Pages 01)

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Subject Code	BP106RMT
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Section A consists of Two questions carrying 10 marks each (Long Answer); attempt any **ONE.*

***Section B consists of Seven questions carrying 5 marks each (Short Answer); attempt any **FIVE**.*

Section- A (1X 10=10)

1.	Find the inverse of the matrix $A=\begin{bmatrix}1 & -1 & 2\\ 0 & 2 & -1\\ 2 & 1 & 1\end{bmatrix}$
2.	Find the value of x,y,z by crammer's rule. $2x+3y-x=1$ $4x+y-3z=11$ $3x-2y+5z=21$

Section- B (5X 5=25)

3.	a) Find roots of the polynomial $2x^2-5x+3$ b) Define zero polynomial.
4.	Evaluate a) $\lim_{x\to 1}(x^2-2x+5)$ b) $\lim_{x\to 3}(\frac{x^2-1}{x+3})$
5.	Find the value of determinant $\begin{vmatrix}15 & 10 & 9\\ -4 & 12 & 10\\ 9 & 8 & 11\end{vmatrix}$
6.	Show that the points (-5,7) (-4,5) (1,-5) are collinear.
7.	Differentiate $y=(4x^3-5x^2+1)^7$
8.	Find laplace transform of $5\cos 4t+\sin(-3t)+9$
9.	Prove that $\log 24=\log 2+\log 3+\log 4$

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(Morning)

111223

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Subject Code	BP106RMT
Paper ID	74650
Time	1.5 Hours
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Instructions to Candidates: *No supplementary/continuation sheet will be issued to the candidates. Answer the questions precisely.*
Section A consists of two questions carrying 10 marks each (Long Answer); attempt any **ONE.*
*** Section B consists of seven questions carrying 5 marks each (Short Answer); attempt any **FIVE**.*

Section A

(1 X 10 = 10)

1.	Find the inverse of the matrix $A=\begin{bmatrix}1 & 3 & 3\\ 1 & 4 & 3\\ 1 & 3 & 4\end{bmatrix}$
2.	Solve by using Laplace Transform, $\frac{d^2y}{dt^2}+y=\ 6\ sin2t$, given that y(0) =2, y'(0) =1.

Section B

(5 X 5 = 25)

3.	Evaluate $\lim_{x\to 2}\frac{x^2+3x-10}{x^2-9x+14}$
4.	Solve by Using Cramer's Rule: x+y+z =1, 2x+2y+2z =2, 3x+3y+3z =4.
5.	Find the maximum and minimum values of x^3-$3x^2$-9.
6.	Find the equation of the line through (4,3) and (i) parallel, (ii) perpendicular to the line 3x+4y+7=0
7.	Solve, $x^2y\ dx-(x^3+y^3)\ dy=0$
8.	Solve $\int x(\log x)^2\ dx$.
9.	Find the inverse Laplace of $\left(\frac{3s}{s^2+2s-8}\right)$

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130624 (M)

Roll Number ----------(Total Number of Questions 09) (Total number of Printed Pages 01)

Programme	B. Pharmacy
Semester	1st
Subject	Remedial Mathematics
Subject Code	BP106RMT
Paper ID	74650
Time	1.5 Hours
Maximum Marks	35

Instructions to Candidates:*No supplementary/continuation sheet will be issued to the candidates. Answer the questions precisely.*
Section A consists of two questions carrying 10 marks each (Long Answer); attempt any **ONE.*
***Section B consists of seven questions carrying 5 marks each (Short Answer); attempt any **FIVE**.*

Section- A **(1 X 10 = 10)**

1.	By using matrix method, to solve the system of equation- $x+y+z = 3,$ $2x-y+z = 2,$ $x-2y+3z = 2$
2.	Evaluate $\int_0^{\pi} \frac{x}{1+sinx} dx$

Section- B **(5 X 5 = 25)**

3.	Prove that $3\log 4 + 2\log 5 + \frac{1}{3}\log 64 - \frac{1}{2}\log 16 = 2.$
4.	If $A = \begin{bmatrix} 7 & 2 \\ 8 & 9 \end{bmatrix}$ and $B = \begin{bmatrix} -1 & 4 \\ 0 & 5 \end{bmatrix}$ Find A + 2B.
5.	Differentiate $\frac{5x}{3x+2}$ w.r.t x
6.	Find the area of the triangle whose vertices are (1,6) , (3,0) and (-3,-7). ***and*** Find the equation of line through (4,3) with slope 2.
7.	Evaluate $\lim_{x\to 0} \frac{\sqrt{x+1}-1}{x}$
8.	Solve the differential equation $\frac{dy}{dx} = x^6 + x^2 - \frac{3}{x}$
9.	Find $\frac{dy}{dx}$ if $y = 3x^2 + 7x^7$

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18 12 24

Roll Number ---------- (Total Number of Questions 09) (Total number of Printed Pages 01)

Programme	B. Pharmacy
Semester	1st
Subject	Remedial Mathematics
Subject Code	BP106RMT
Paper ID	94636
Time	1.5 Hour
Maximum Marks	35

Instructions to Candidates: *No supplementary/continuation sheet will be issued to the candidates. Answer the questions precisely.*
Section A consists of Two questions carrying 10 marks each (Long Answer); attempt any **ONE.*
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Section- A **(1 X 10 = 10)**

1.	Solve $\int x^3 \sin 2x \, dx$.
2.	Solve by using matrix method x-y + 2z = 7, 3x + 4y-5z = -5, 2x-y + 3z =12.

Section B **(5 X 5 = 25)**

3.	Resolve into Partial Fraction $\frac{x^2}{(x+1)(x+2)(x+3)}$
4.	Verify Cayley Hamilton Theorem for the Matrix A= $\begin{pmatrix} 3 & -7 \\ 4 & 5 \end{pmatrix}$
5.	Find the derivative of $y = e^{2x} \log(3x + 1)$
6.	Find the equation of the line passing through the mid-point of the line segment joining the points (1, 3) and (2, -1) and parallel to the line 3x-y = 7.
7.	Solve, $(2xy - \sin x)\,dx+(x^2 - \cos y)\,dy = 0$.
8.	Evaluate $\frac{dy}{dx}$ if $y = \frac{x^2+3}{\cos 3x}$.
9.	Solve the differential equation using Laplace transform, y''+ y'=2 where y (0) =3 and y' (0) =1.

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(Morning)
19 12 25

Roll Number ----------(Total Number of Questions 09) (Total number of Printed Pages 01)

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Semester	1st
Subject	Remedial Mathematics
Subject Code	BP106RMT
Paper ID	94636
Time	1.5 Hour
Maximum Marks	35

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Section A consists of Two questions carrying 10 marks each (Long Answer); attempt any **ONE.*
***Section B consists of Seven questions carrying 5 marks each (Short Answer); attempt any **FIVE**.*

Section- A **(1 X 10 = 10)**

1.	Find the inverse of the matrix $A=\begin{bmatrix}1 & 2 & 3\\ 2 & 3 & 1\\ 3 & 1 & 2\end{bmatrix}$
2.	Solve: $\int x^3 \cos 2x \, dx$

Section B **(5 X 5 = 25)**

3.	Evaluate: $\lim_{x\to 2} \frac{x^2+3x-10}{x^2-9x+14}$
4.	Verify Cayley Hamilton Theorem for the Matrix $A=\begin{pmatrix}1 & -2\\ 2 & 1\end{pmatrix}$
5.	Find the maximum and minimum value of x^3-3x^2-9.
6.	Find the equation of the line perpendicular to the line $3x+4y+5=0$ passing through the point $(4,-5)$.
7.	Solve, $x^2y\,dx-(x^3+y^3)\,dy=0$
8.	Evaluate $\frac{dy}{dx}$ if $y=\frac{x^2+5}{3x-3}$.
9.	Solve the differential equation using Laplace transform, $y''+9y=0$ where $y(0)=1$ and $y'(0)=0$.

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