

B.Pharm. First Semester (New)  
**35307 : Remedial Mathematics : BP 106 RMT**

P. Pages : 1

Time : One & Half Hours



**AV - 2369 Add**

Max. Marks : 35

- Notes :
1. All question solve all questions.
  2. Answer **all** question from given questions.
  3. Use of slide rule logarithmic tables, Steam tables, Moller's Chart, Drawing instrument, Thermodynamic table for moist air, Psychrometric Charts and Refrigeration charts is permitted. Use of simple calculator is permitted.
  4. Use of pen Blue/Black ink/refill only for writing the answer book.

**1. Solve any one. 10**

- a) Examine the function for maxima & minima  $F(x) = 2x^3 - 9x^2 + 12x + 5$ .
- b) Find  $x, y, z$  using Cramer Rule if  
 $x + 2y + 3z = 6$ ,  $2x + 4y + z = 7$   
 $3x + 2y + 9z = 14$

**2. Solve any five. 25**

- a) Evaluate  $\int_0^{\pi/2} \frac{\sin x}{\sin x + \cos x} dx$
- b) Find derivative of  $\log x$  by first principle.
- c)  $A = \begin{bmatrix} 1 & 2 & 2 \\ 2 & 1 & 2 \\ 2 & 2 & 1 \end{bmatrix}$  Show  $A^2 - 4A$  is scalar matrix.
- d) Evaluate  $\lim_{x \rightarrow 1} \frac{(x^2 + 1) \sin(x - 1)}{x^2 - 3x + 2}$
- e) Find acute angle between the lines whose slopes are  $\sqrt{3}$  &  $1/\sqrt{3}$
- f) Find Laplace transform of function  $5 \sin 4t + 2 \cos 5t + e^{2t} + t^3$ .
- g) Form a differential equation by eliminating the arbitrary constants from equation  $y = a + b \cos x$ .

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