Code: 13R00101 **R13**

B.Pharm I Year (R13) Supplementary Examinations December 2017

REMEDIAL MATHEMATICS

Time: 3 hours Max. Marks: 70

PART – A

(Compulsory Question)

*****

1 Answer the following: (10 X 02 = 20 Marks)

(a) If first terms of an A.P. is 6 and the common difference is 2, find the 15th term.

(b) If $log_4(x^2+x) - log_4(x+1) = 2\ then\ find\ x$.

(c) Find the values of $sin^2\frac{\pi}{4} + cos^2\frac{\pi}{4} - tan^2\frac{\pi}{3}$.

(d) If sin A = 4/5 and sin B = 5/13, find the values of sin (A+B), cos (A+B).

(e) Show that the points (1, -1), (5, 2) and (9, 5) are collinear.

(f) Find the equation of the line passing through the points (2, 1) and (4, -3).

(g) Find $\frac{dy}{dx}\ when\ y = e^x + sinx + 7$.

(h) Evaluate $\int 3x^2 + 9x + 10$.

(i) Find the order and degree of the differential equation $\frac{d^2y}{dx^2} + \left(\frac{dy}{dx}\right)^2 + xy = 0$.

(j) Explain the properties of Laplace transforms.

PART – B

(Answer all five units, 5 X 10 = 50 Marks)

UNIT – I

2 The 4th term of Geometric Progression (G.P) is square of its 2nd term and 1st term is -3. Determine its 7th term.

OR

3 Resolve $\frac{x-1}{(x-1)(x-2)^2}$ into partial fractions.

UNIT – II

4 Find the value of $tan^2 60° + 2tan^2 45°$.

OR

5 If tan A = ½, tan B = 1/3 and A, B are acute angles find A+B.

UNIT – III

6 Show that the following points are the vertices of a parallelogram (1, -2), (3, 6), (5, 10) and (3, 2).

OR

7 Find the area of the triangle formed by the straight line x - 4y + z = 0 and the coordinate axes.

UNIT – IV

8 Find $\frac{dy}{dx}, when\ y = 3e^x + 5x^4 + 2sinx$

OR

9 Find $\int \frac{x-1}{(x-2)(x-3)}dx$.

UNIT – V

10 By eliminating a, b form the differential equation from $(x-a)^2 + (y-b)^2 = r^2$.

OR

11 Find the Laplace transforms of $e^{-3t}(2\ cos5t - 3\ sin5t)$.

*****