Code No: PHR16112 **R16** SET - 1

I B. Pharmacy I Semester Supplementary Examinations, February - 2020
REMEDIAL MATHEMATICS-I

Time: 3 hours Max. Marks: 70

Note: 1. Question paper consists of two parts (**Part-A** and **Part-B**)
2. Answering the questions in **Part-A** is Compulsory
3. Answer any **FOUR** Questions from **Part-B**

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PART –A

1. a) Find the value of ${}^{78}P_8$ (2M)

b) Write the value of sinh(A-B) (2M)

c) Find the distance between the points (1 , 2), (-5, 7) (2M)

d) Find $Lt_{x\to 3}\dfrac{x-3}{x^2-9}$ (2M)

e) Evaluate $\int\dfrac{1}{x}dx$ (2M)

f) Find the Laplace transform of t^2 (2M)

g) Find the order and degree of the DE $\left(y^{11}\right)^2+3y^1+2y=\sin x$ (2M)

PART -B

2. a) Find 'x ' if $\begin{vmatrix} x+1 & x+2 & x+4 \\ x+3 & x+5 & x+8 \\ x+7 & x+10 & x+14 \end{vmatrix}=-2$ (7M)

b) Resolve $\dfrac{1}{(x-1)^2(x+2)}$ into partial fractions. (7M)

3. a) If cosecθ + cotθ = p , then show that $(p^2+1)\cos\theta = p^2-1$ (7M)

b) A flag staff stands upon the top of a building at distance 40m,the angles of elevation of the top of the flagstaff and building are 60^0 and 30^0 .Find the length of the flag-staff. (7M)

4. a) Find the foot of the perpendicular drawn from (4, 1) upon the straight line. 3x -4y +12 = 0. (7M)

b) Find the equation of the locus of P if A = (4 ,0) ,B = (-4, 0) and $|PA-PB|=4$ (7M)

5. a) Using fundamental theorem find the derivative of sec2x. (7M)

b) Find the derivate of $\text{Tan}^{-1}\left(\dfrac{2x}{1-x^2}\right)$ (7M)
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6. a) Evaluate $\int\left(\sqrt{2x-1}\right)(2x+3)dx$ (7M)

   b) Find the area of the triangle with the vertices (-4 ,0) ,(2, 0) & (2 ,6) (7M)

7. a) Solve the D.E $\frac{dy}{dx}=\frac{x^3+y^3}{xy^2}$ (7M)

   b) Form the D.E. of family of circles whose centers lies on y-axis and of constant radius. (7M)