

I B. Pharmacy I Semester Supplementary Examinations, February - 2019
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 question in **Part-A** is Compulsory
 3. Answer any **THREE** Questions from **Part-B**

PART - A

1. a) Write first three terms in the expansion of $(3+4x)^{\frac{2}{3}}$ (4M)
- b) Find $\tan 15^\circ$. (4M)
- c) Show that the points (2,2), (6,3), (4,11) form a right angled triangle. (4M)
- d) Evaluate $\int \sqrt{x}(1-x)dx$ (4M)
- e) Show that $y = e^x + 1$ is a solution of the D.E $\frac{d^2y}{dx^2} - \frac{dy}{dx} = 0$ (3M)
- f) Find $Lt_{x \rightarrow 1} \frac{2x^3 - 3x^2 + 1}{9x^2 + 8x + 7}$ (3M)

PART - B

2. a) Resolve $\frac{1}{(x-1)^2(x-2)}$ into partial fractions. (8M)
- b) Find the Inverse of the matrix $A = \begin{bmatrix} 1 & 3 & 3 \\ 1 & 4 & 3 \\ 1 & 3 & 4 \end{bmatrix}$ (8M)
3. a) In triangle ABC prove that $\sin A + \sin(B-C) = 2\sin B \cos C$. (8M)
- b) Prove that $\cos 2A = \cos^2 A - \sin^2 A = \frac{1 - \tan^2 A}{1 + \tan^2 A}$ (8M)
4. a) Find the locus of point P such that $PA + PB = 6$ where A (0,2) and B(0,-2). (8M)
- b) Find the equation of the straight line of inclination 135° and intercept -3 on the y-axis. (8M)
5. a) Evaluate $\int \operatorname{cosec} x dx$ (8M)
- b) Evaluate $\int \frac{dx}{(x+2)(x+3)}$ (8M)
6. a) Solve the D.E $\frac{dy}{dx} = \frac{y^2 + 1}{1 + x^2}$ (8M)
- b) Find the $L(e^{-t} \cosh t + t^2)$ (8M)
7. a) Find the derivate of $\log[x + \sqrt{x^2 - 1}]$ (8M)
- b) Find the derivate of 3^x . (8M)