

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[LP 806]

OCTOBER 2019

Sub. Code: 3806

PHARM. D DEGREE EXAMINATION
(2009-2010 Regulation)
FIRST YEAR
PAPER VI – REMEDIAL MATHEMATICS
Q.P. Code : 383806

Time : Three hours

Maximum : 70 Marks

I. Elaborate on:

(4 x 10 = 40)

1. If $A = \begin{bmatrix} 2 & -3 \\ 1 & 5 \end{bmatrix}$ and $B = \begin{bmatrix} 3 & -1 & 2 \\ 1 & 0 & 0 \end{bmatrix}$ then verify that $(AB)^T = B^T A^T$.
2. Show that $\cos 20^\circ \cos 40^\circ \cos 80^\circ = \frac{1}{8}$.
3. Find the distance between the points $(a \cos \alpha, a \sin \alpha)$ and $(a \cos \beta, a \sin \beta)$.
4. Integrate $\int \frac{(3x+1)}{(x-1)^2(x+3)} dx$.

II. Write notes on:

(6 x 5 = 30)

1. Find the value of the determinant $A = \begin{vmatrix} 1 & 2 & 3 \\ 2 & 4 & 6 \\ 3 & 6 & 9 \end{vmatrix}$.
2. Find (a) $\sin 78^\circ \cos 18^\circ - \cos 78^\circ \sin 18^\circ$ (b) $\cos 48^\circ \cos 18^\circ - \sin 48^\circ \sin 18^\circ$.
3. Show that (0, -1) (2, 1) (0, 3) and (-2, 1) are the vertices of a square.
4. Evaluate $\int_0^{\pi/2} x \sin x dx$.
5. Differentiate $x^2 e^x \sin x$.
6. Solve the differential equation $(y^4 - 2x^3 y)dx + (x^4 - 2xy^3)dy = 0$.
