

UKA TARSADIA UNIVERSITY
MALIBA PHARMACY COLLEGE

Seat No.: _____

B. Pharm-I MID-SEM EXAM -2011

Enrolment No. _____

Subject Name: Elementary (Remedial) Mathematics (30020102)

Date: 16/12/2011

Time: 11:00 am to 12:30 pm

Max. Marks: 30

Instructions:

1. Attempt all questions.
2. Write each section in a separate answer book.
3. Make suitable assumptions wherever necessary.
4. Figures to the right indicate full marks.
5. Draw diagrams/figures whenever necessary.

Que.1 (A) Evaluate the Following Equations:

[07]

- I) 7P_4
- II) ${}_{10}C_3$
- III) 100^2
- IV) $\log_2 \frac{1}{8}$
- V) $\frac{2\pi}{3}$ Angle to Degree measure
- VI) 420° Degree to Radian measure
- VII) Find the Distance between the points (-2, 3) and (-9,-2).

Q-1 (B) Answer the following in brief:

[08]

- I) Find the Value of $\sqrt{6 + \sqrt{6 + \sqrt{6 + \dots \infty}}$
- II) Evaluate: $6\operatorname{cosec}^2 \frac{\pi}{3} - 7\cos^2 \frac{\pi}{2} - 5\sec^2 \frac{\pi}{4} + 4\cot^2 \frac{\pi}{6}$
- III) Expand $D = \begin{vmatrix} -1 & 1 & -2 \\ 3 & 2 & 1 \\ 0 & -1 & -1 \end{vmatrix}$ by Sarrus Method.
- IV) Expand $(X + 3)^6$ using Binomial Theorem.

Q-2 Answer the following: (any 5)

[15]

- I) Prove that, $\frac{\cos A}{1 - \sin A} = \frac{1 + \tan \frac{A}{2}}{1 - \tan \frac{A}{2}}$
- II) Prove that, $\frac{1}{\log_6 24} + \frac{1}{\log_{12} 24} + \frac{1}{\log_8 24} = 2$

III) Prove that,
$$\begin{vmatrix} \alpha & \beta & \gamma \\ \alpha^2 & \beta^2 & \gamma^2 \\ \beta + \gamma & \gamma + \alpha & \alpha + \beta \end{vmatrix} = (\beta + \gamma)(\gamma - \alpha)(\alpha - \beta)(\alpha + \beta + \gamma)$$

IV) For a Geometric Sequence $T_5=81$ and $T_2=3$, then find T_3 and S_3 .

V) Calculate the Mean and Standard Deviation for the following table giving the range distribution of 542 members.

Age in yrs	20-30	30-40	40-50	50-60	60-70	70-80	80-90
No. of Members	3	61	132	153	140	51	2

VI) Obtain $\frac{dy}{dx}$, when $x = a(\cos t + \log \tan \frac{t}{2})$, $y = a \sin t$

VII) Evaluate the Following. $I = \int \sqrt{x} \log x dx$

*****BEST OF LUCK*****