



Faculty: Medicine and Allied Health Sciences		Year/Part: I/I
Program: Pharmacy		Exam Year: 2080, Mangshir (Model Question)
Level: Bachelor	Subject: Mathematics for Pharmacy (BP106)	

**GROUP A (Multiple Choice Questions)**

[5x1=5]

- i. Answers should be given by filling the Multiple Choice Questions' Answer Sheet.
- ii. Rough can be done in the main answer sheet
- iii. Maximum time of 10 minutes within the total time is given for this group.

1. Which of the following is correct?

- b.  $\int_0^{\infty} e^{-x} x^{n-1} dx, n > 0$
- c.  $\int_0^{\infty} e^{-x} x^n dx, n > 0$
- d.  $\int_0^1 e^{-x} x^{n-1} dx, n > 0$
- e.  $\int_0^1 e^{-x} x^n dx, n > 0$

2. A differential equation  $f(x)dx + g(x)dx = 0$  is called..... if it can be written as  $\int f(x) dx + \int g(x)dx = c$

- a. Homogeneous
- b. Exact
- c. Linear
- d. Separable

3. If  $f''(X) = 0$  then it gives

- a. Point of inflection
- b. Stationary point
- c. Maximum point
- d. Minimum point

4. In  $\int f(x)dx$ ,  $f(x)$  is called...

- a. Variable
- b. Homogeneous
- c. Integrand
- b. Constant

5. The area of ellipse  $\frac{x^2}{4} + \frac{y^2}{9} = 1$  is

- a.  $25\pi$  sq. Units
- b.  $12\pi$  sq. Units
- c.  $4\pi$  sq. Units
- b.  $6\pi$  sq. Units

Marks Secured: \_\_\_\_\_

Code No.

In Words: \_\_\_\_\_

Examiner's Sign: \_\_\_\_\_ Date: \_\_\_\_\_

Scrutinizer's Marks: \_\_\_\_\_

In Words: \_\_\_\_\_

Scrutinizer's Sign: \_\_\_\_\_ Date: \_\_\_\_\_

Corrected Fill  
 A  B  C  D

Incorrected Fill  
 A  B  C  D

**Multiple Choice Questions' Answer Sheet**

1. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D	6. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D
2. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D	7. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D
3. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D	8. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D
4. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D	9. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D
5. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D	10. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D

**MANMOHAN TECHNICAL UNIVERSITY**  
**Office of the Controller of Examinations**

Budhiganga-4, Morang, Koshi Province, Nepal  
Exam Year: 2080, Mangshir

<b>Faculty: Medicine and Allied Health Sciences</b>	<b>Level: Bachelor</b>	<b>Year/Part: I/I</b>
<b>Program: Pharmacy</b>	<b>Time: 1.5 Hours</b>	<b>F.M.: 25</b>
<b>Subject: Mathematics for Pharmacy (BP106)</b>		<b>P.M.: 12.5</b>

- ✓ Candidates are required to give their answers in their own words as far as practicable.
- ✓ The figures in the margin indicate Full Marks.
- ✓ Assume suitable data if necessary.

**GROUP A (Multiple Choice Questions and Answer Sheet in separate paper) [5x1=5]**

**GROUP B (Problem Based Question) [1x6=6]**

1. What is the significance of the derivative in physical context? In a population, the number of people infected with a disease at time  $t$  is modeled by  $I(t) = \frac{3000}{1+e^{-0.1t}}$ . Determine the rate at which the infection is spreading at 10 weeks. [2+4]

**GROUP C (Long Answer Questions - Attempt Any Two) [2x4=8]**

2. Solve  $(x + y + 1) \frac{dy}{dx} = 1$
3. Find  $\frac{dy}{dx}$  if  $y = \frac{x\sqrt{x^2-a^2}}{2} - \frac{a^2}{2} \log(x + \sqrt{x^2 - a^2})$
4. Find the Laplace transform of  
a.  $\cos at$     b.  $\sin at$

**GROUP D (Short Answer Questions - Attempt Any Three) [3x2=6]**

5. Evaluate:  $\int \sec x \, dx$
6. Find the area bounded by y-axis the curve  $x^2 = 4y$ ,  $y = 0$ ,  $y = 2$ .
7. Evaluate by using Gamma function.
8. Find maximum and minimum values of  $x^2y$  when  $x + y = 5$ .

∞∞ **The End** ∞∞