

School: School of Medicine and Allied Health Sciences	Level: Bachelor	
Program: Pharmacy	Year/Part: II/II	Superintendent's Sign:
Subject: Medicinal Chemistry I (BP405)		Code No.

GROUP A (Multiple-Choice Questions)	[10×1=10]	Maximum Time: 20 Minutes
<p>i. This group contains 10 multiple-choice questions (MCQs).</p> <p>ii. Answers must be marked on the MCQ Answer Sheet.</p> <p>iii. You may use the main answer sheet for rough work.</p> <p>iv. Marks will not be awarded for answers with cutting, erasing, overwriting, or multiple shaded options.</p> <p>v. The MCQ question paper must be returned along with the MCQ answer sheet.</p>		Code No.:

- Which of a physicochemical property is most critical for a drug to cross the blood-brain barrier?
 - High water solubility
 - Lipophilicity
 - High molecular weight
 - Acidity
- The purpose of bioisosterism in medicinal chemistry is
 - To increase the cost of drug production
 - To replace a functional group with another to improve drug properties
 - To eliminate all side effects
 - To reduce drug potency
- Which property is most likely to limit a drug's ability to cross the blood-brain barrier?
 - Low polar surface area
 - High lipophilicity
 - High water solubility
 - Low molecular weight
- The chemical structure of Atropine contains the following functional groups
 - Quaternary ammonium
 - Ester and tropane ring
 - Phenol
 - Sulfonamide
- Following NSAIDs is belongs to the propionic acid class
 - Piroxicam
 - Naproxen
 - Sulindac
 - Mefenamic acid
- Key structural feature of beta-blockers like propranolol have
 - Presence of a nitro group
 - A secondary or tertiary amine with an isopropyl group
 - A quinoline ring system
 - A sulfonamide moiety
- Which functional group at the C-17 position distinguishes progesterone from other steroidal hormones?
 - Ketone group
 - Hydroxyl group
 - Aldehyde group
 - Ester group
- The essential group for the activity of the alkylating agent cyclophosphamide is
 - Nitro group
 - Nitrogen mustard group
 - Pyrimidine ring
 - Carboxylic acid
- A tablet of Cotrimoxazole contains 80 mg of trimethoprim. What should be the concentration of sulphamethaxazole in this formulation?
 - 200 mg
 - 400 mg
 - 600 mg
 - 800 mg
- The chemical structure of Diclofenac is

a)

b)

c)

d)

MCQ Answer Sheet

Marks Secured: _____

In Words: _____

Examiner's Sign: _____ Date: _____

Scrutinizer's Marks: _____

In Words: _____

Scrutinizer's Sign: _____ Date: _____

Corrected Fill			
(A)	(B)	(C)	(D)
Incorrected Fill			
(X)	(B)	(C)	(D)

1. (A) (B) (C) (D)	6. (A) (B) (C) (D)
2. (A) (B) (C) (D)	7. (A) (B) (C) (D)
3. (A) (B) (C) (D)	8. (A) (B) (C) (D)
4. (A) (B) (C) (D)	9. (A) (B) (C) (D)
5. (A) (B) (C) (D)	10. (A) (B) (C) (D)

Manmohan Technical University
Office of the Controller of Examinations
Exam Year: 2082, Jestha **(Model Question)**

School: School of Medicine and Allied Health Sciences	Level: Bachelor	Time: 3 Hours
Program: Pharmacy	Year/Part: II/II	Full Marks: 50
Subject: Medicinal Chemistry I (BP405)		Pass Marks: 25

- ✓ 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 are provided on separate sheet)

[10×1=10]

GROUP B (Problem Based Question)

[1×10=10]

1. Medicinal Chemistry is a multidisciplinary field that combines chemistry, pharmacology, and biology to design and develop drugs. Answer the following questions.
 - a. Write about the importance of Medicinal chemistry in the field of pharmaceutical science. [3]
 - b. Outline the basic principles of drug design. [3]
 - c. Discuss about the SAR in detail. [4]

GROUP C (Long Answer Questions - Attempt Any Four)

[4×5=20]

1. Explain the chemistry of steroids and its classification. Discuss about the sex hormones in brief.
2. Explain the biosynthesis of adrenaline and noradrenaline. Discuss the SAR of adrenergic drugs.
3. Mention the classification of antihypertensive drugs. Highlight the ACE inhibitors with structure in brief.
4. Write about the Antineoplastic agent and its classification. Explain about the plant alkaloids used as anticancer drugs.
5. Mention the chemical structure of the following drugs along with MOA and therapeutic uses. (Any five)
6. Prednisolone, Estrogen, Losartan, succinylcholine, Atenolol, Omeprazole, Ranitidine, Methotrexate.

GROUP D (Short Answer Questions - Attempt Any Five)

[5×2=10]

7. Describe the mechanism of action of Co-trimoxazole. How does the combination of Trimethoprim and Sulfamethoxazole enhance antibacterial activity?
8. Discuss about the organophosphate poisoning. Write the role of Pralidoxime in OP poisoning.
9. Write in short about chemistry and MOA of Warfarin.
10. Differentiate between antiseptic and disinfectants with examples.
11. Classify antiulcer drugs. Provide a chemistry of any one proton pump inhibitor.
12. Mention the synthesis of the following drugs (Any Two)
 - a. Paracetamol
 - b. Pyridostigmine
 - c. Propanolol

∞∞ The End ∞∞