



Name :

Roll No. :

Invigilator's Signature :

CS/B.Pharm (OLD)/SEM-6/PT-603/2013

2013

**PHARMACEUTICAL CHEMISTRY
(MEDICINAL CHEMISTRY)**

Time Allotted : 3 Hours

Full Marks : 70

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

GROUP – A

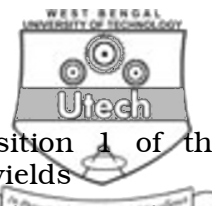
(Multiple Choice Type Questions)

1. Choose the correct alternatives for any *ten* of the following : 10 × 1 = 10

- i) Alprazolam, a newer hypnotic drug, is formed by annelating the 1, 2 bond of ring B of 1, 4 benzodiazepine with a ring
- | | |
|---------------|-----------------|
| a) triazole | b) imidazole |
| c) pyrimidine | d) imidazoline. |
- ii) Opium alkaloid, papaverine, a marked antispasmodic drug contains ring
- | | |
|------------------------|-------------------------|
| a) Phenanthrene | b) Isoquinoline |
| c) Phenyl isoquinoline | d) Benzyl isoquinoline. |
- iii) Selective MAO-A inhibitor is
- | | |
|----------------|--------------------|
| a) Phenelzine | b) Tranylcypromine |
| c) Chlorgiline | d) Selegiline. |

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[Turn over



- iv) Replacement of the NH group at position 1 of the hydantoin system with an oxygen atom yields
- Succinamides
 - Oxazolidine 2, 4-dione
 - Barbiturate
 - Semicarbazone.
- v) Dihydropyridine ring containing calcium channel blocker (CCB) is
- Verapamil
 - Diltiazem
 - Nifedipine
 - Bepridil.
- vi) High ceiling diuretics act by inhibiting
- $\text{Na}^+ - \text{K}^+ - 2\text{Cl}^-$ co-transport
 - $\text{Na}^+ - \text{Cl}^-$ symport
 - $\text{Na}^+ - \text{H}^+$ antiport
 - water reabsorption.
- vii) Nitrous oxide is used as
- Local anaesthetic
 - Anticonvulsant
 - General anaesthetic
 - Antidepressant drug.
- viii) Chemically haloperidol belongs to the class of
- Phenothiazine
 - Butyrophenone
 - Benzodiazepine
 - Dibenzocycloheptane.
- ix) All of the following compounds are considered as opioid analgesics *except*
- Phenyl butazone
 - Morphine
 - Pethidine
 - Methadone.
- x) Imipramine is used as
- Anticonvulsant drug
 - Antiparkinsonism drug
 - Antitussive drug
 - Antidepressant drug.
- xi) A compound which is not used as antianginal is
- Nitroglycerine
 - Verapamil
 - Atenolol
 - Disulphamide.
- xii) Example of an ACE inhibitor antihypertensive drug is
- Nicorandil
 - Enalapril
 - Amiodarone
 - Procainamide.

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GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following. $3 \times 5 = 15$

2. Write a short note on vasodilators.
3. Briefly discuss about the nomenclature of steroidal drugs.
4. Describe ACE inhibitors with proper examples.
5. Barbiturates do not exhibit action unless 5, 5-disubstituted. Explain.
6. Discuss the structure-activity relationship of benzodiazepine derivatives.

GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following. $3 \times 15 = 45$

7. Define and classify Tricyclic antidepressant (TCA) drugs. Describe the structure activity relationship of these drugs. Give the synthetic procedure of any *two* of the following drugs :
 - i) Imipramine
 - ii) Amitriptyline
 - iii) Haloperidol
 - iv) Chlorpromazine. $3 + 6 + (2 \times 3)$
8. Define and classify opioid analgesics. Describe the different uses of morphine derivatives. Describe the SAR semisynthetic morphine derivatives. Show the synthesis of any *two* of morphine derivatives or anticonvulsant drugs.

$$3 + 2 + 5 + (2 \times 2 \frac{1}{2})$$

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9. Define and classify diuretics. Discuss the SAR of thiazide diuretics. Describe the synthetic procedure of any two diuretics taking from different classes. $4 + 5 + (2 \times 3)$

10. Describe angina pectoris. Classify the drugs used for the treatment of angina pectoris. How do Ca^{+2} channel blockers act as antianginal drugs? Write a short note on lipid lowering agents. Discuss the mechanism action of heparin. $2 + 3 + 3 + 4 + 3$

11. a) Classify sedative and hypnotic drugs with appropriate examples.
b) Give the structure and chemical name of Phenobarbitone and Diazepam.
c) Briefly describe the SAR of benzodiazepine derivatives. $4 + 4 + 7$

12. a) Define antiarrhythmics and antianginals with examples.
b) Give a classification of antianginal drugs with necessary examples.
c) Briefly explain the mode of action of organic nitrites and nitrates as antianginals.
d) Show the synthesis of procainamide and lidocaine. $3 + 3 + 4 + 5$

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