



Name :

Roll No. :

Invigilator's Signature :

**CS/B.PHARM/SEM-6/PT-603/2010
2010**

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) Which one of the following functional groups is useful for the local anaesthetic activity ?
 - a) Amide
 - b) Aldehyde
 - c) Ketone
 - d) Carboxylic acid.
- ii) Openauer oxidation is a specific reaction for
 - a) benzodiazepine nucleus preparation
 - b) sex hormone preparation
 - c) sulphonamide preparation
 - d) iso-oxazole moiety preparation.
- iii) The reaction between hydrazine hydrate and ammonium thiocyanate yields
 - a) 1, 2 bis-thiocarbamoyl hydrazine
 - b) 1-thiocarbamoyl hydrazine
 - c) 2-thiocarbamoyl hydrazine
 - d) 2, 3-bis-thiocarbamoyl hydrazine.

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- xi) Alprazolam, a newer hypnotic is formed by annelating the 1, 2 bond of ring B of 1, 4 Benzodiazepine with which of the following rings ?
- a) Triazole b) Pyrazole
c) Imidazole d) Pyrimidine.
- xii) Which of the following drugs is used in doping ?
- a) Estradiol b) Dihydrotestosterone
c) Nandrolone d) Cortisone.

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following. 3 × 5 = 15

2. What are calcium channel lockers ? Give at least three examples of calcium channel blockers with the synthesis of at least one drug.
3. Write in detail about the SAR of Benzodiazepine.
4. Write down the biosynthetic pathway of corticosteroids from cholesterol.
5. Enumerate briefly about heparin as anticoagulant.
6. Outline the synthesis of any *two* of the following :
 - i) Methohexital sodium
 - ii) Haloperidol
 - iii) Cocaine.

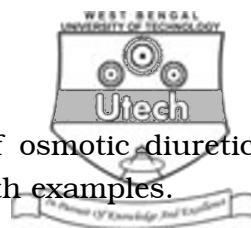
GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following. 3 × 15 = 45

7. Define steroid. Discuss in detail about the nomenclature and stereochemistry for steroidal nucleus. Outline the synthetic procedure for the preparation of any non-steroidal estrogen.

2 + (2 × 5) + 3



8. a) Explain briefly the mode of action of osmotic diuretics and carbonic anhydrase inhibitors with examples.
- b) Discuss the SAR of thiazide diuretics.
- c) Write the synthetic route and uses of any *two* of the following compounds :

Hydrochlorothiazide, Acetazolamide, Frusemide.

5 + 4 + (2 × 3)

9. a) Define and classify local anaesthetic according to the chemical structure.
- b) What is the difference between anaesthetic and analgesic ?
- c) Write the SAR of Morphine as opioid analgesics. Show the structure wherever possible.

4 + 2 + 9

10. What do you mean by hypertension ? Classify antihypertensive drugs. Give the examples of β -adrenergic blockers and centrally acting drug and explain their MOA.

2 + 3 + 5 + 5

11. a) Define atrial fibrillation and atrial flutter.
- b) What is angina pectoris ? Give a classification of antianginal drugs with necessary examples.
- c) Explain the mode of action of organic nitrate as antianginal drug.
- d) Write the MOA of IA antiarrhythmics. Give two examples of this class.

4 + (1 + 3) + 4 + 3

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