



Name :

Roll No. :

Invigilator's Signature :

CS/B.PHARM/SEM-7/PT-703/2010-11

2010-11

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) Starting material for the synthesis of chloroquine is
- a) p-chloro aniline
 - b) m-chloro aniline
 - c) o-chloro aniline
 - d) aniline.

7013

[Turn over

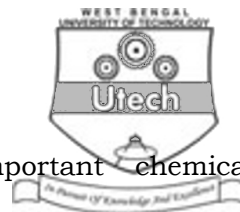


- ii) In cephalosporins, higher resistance to hydrolysis by β -lactamases is shown when
- a) The amino group is acylated
 - b) Replacement of sulphur with oxygen
 - c) Oxidation of ring sulphur to sulfoxide or sulphone
 - d) Introduction of C-7 α -methoxy group.
- iii) The antiviral drug with no heterocyclic ring system is
- a) Nelfinavir
 - b) Loviride
 - c) Zidovudine
 - d) Zalcitabine
- iv) Which of the following is used as starting material in the synthesis of trimethoprim ?
- a) 3, 4, 6 – trimethoxy benzaldehyde
 - b) 3, 4, 5 – trimethyl benzaldehyde
 - c) 3, 4, 5 – trimethoxy benzaldehyde
 - d) 1, 2, 4 – trimethyl benzaldehyde.
- v) Diethanol amine is treated with thionyl chloride, followed by pyridine reflux in the presence of POCl_3 (phosphorous orychloride) and finally heated with propanolamine, to produce
- a) Chlorambucil
 - b) Mechlorethamine
 - c) CCNU
 - d) Cyclophosphamide.



- vi) Which of the following moieties is present in the structure of acyclovir ?
- a) Adenine b) Cytosine
c) Guanine d) Thymine.
- vii) Demeclocycline differs from chlortetracycline only by
- a) absence of – CH₃ group on carbon 6
b) presence of – OH group on carbon 6
c) absence of – N (CH₃)₂ group on carbon 4
d) absence of – OH group on carbon 3.
- viii) Primaquine is a derivative of
- a) 4-aminoquinoline
b) 8-aminoquinoline
c) 2, 4-diaminopyrimidine
d) 8-hydroxyquinoline.
- ix) Clavulanic acid has a beta lactum ring fused to
- a) Thieryl system
b) Thiadiazole system
c) Thiazolidine system
d) Oxazolidine system.

CS/B.PHARM/SEM-7/PT-703/2010-11



- x) "Endoperoxide bridge" is the important chemical characteristic of
- a) Quinine b) Quinidine
c) Halofantrine d) Artemether.
- xi) Identify the position of sulfide linkage in Insulin between A and B chains
- a) 7, 7 and 20, 20 b) 20, 20 and 7, 8
c) 7, 7 and 20, 19 d) 8, 10 and 20, 19.
- xii) The antiviral drug which is a thiazole analogue is
- a) Nelfinavir b) Ritonovir
c) Saquinavir d) Loviride.

GROUP – B

(Short Answer Type Questions)

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

2. What do you mean by immunostimulant and immunosuppressive agents ?
3. Describe the main objectives of the development of prodrugs with suitable examples.

7013

4



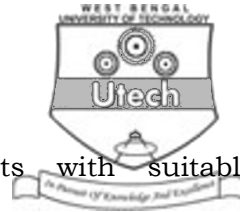
4. Write down any two synthesis from the following drugs :
- Acyclovir
 - Primaquine
 - Zidovudine.
5. Write a brief note on SAR of sulphoramides as antibacterials.
6. Classify anthelmintics. Write the mechanism and scheme of synthesis of albendazole.

GROUP - C

(Long Answer Type Questions)

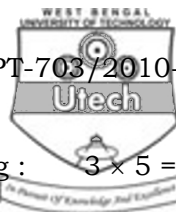
Answer any *three* of the following. $3 \times 15 = 45$

7. What is the causative organism of tuberculosis ? Write down synthesis, mechanism of action and use of any three antitubercular drugs. $1 + 4 + 10 = 15$
8. a) Write mechanism of action and SAR of macrolide antibiotics.
- b) Briefly discuss the chemical instability of tetracyclines.
- c) Write about chelation property of quinolone antibiotics.
- d) Write the scheme of synthesis of norfloxacin and nalidixic acid. $5 + 2 + 2 + 6 = 15$



9. i) Classify the anti-neoplastic agents with suitable examples.
- ii) Write down the structure, synthesis and uses of any four of the following drugs :
- a) Chlorambucil
 - b) Flutamide
 - c) Mechlorethamine
 - d) Fluorouracil
 - e) Tamoxifen citrate
 - f) Megestrol acetate. $5 + (4 \times 2.5) = 15$
10. a) The term 'oral hypoglycemic agent' is a misnomer. Justify it.
- b) How human insulin biosynthesized in vivo ?
- c) Explain the structure activity relationship of sulphonyl urea derivatives.
- d) Describe the mode of action of sulfonyl urea and biguanide classes of oral hypoglycemic agents and synthesize one drug from each class.

$$2 + 3 + 4 + (1 + 1 + 2 + 2) = 15$$



11. Write short notes on any three of the following : $3 \times 5 = 15$

- a) Mechanism of action and synthesis (any two) of azole antifungal agents.
- b) Biosynthesis, storage and release of thyroid hormones.
- c) SAR of thiazolidinedione antihyperglycemics.
- d) Peptidomimetic drugs.
- e) Phase - II drug metabolism.

=====