



Name :

Roll No. :

Invigilator's Signature :

CS/B.Pharm/SEM-8/PT-809C/2010

2010

ADVANCED PHARMACEUTICAL 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) Amphotericin B is isolated from

a) *S. nodosus*

b) *S. noursei*

c) *S. griseus*

d) None of these.

ii) The parent ring system present in the drug clofazimine is

a) Anthracene

b) Phenazine

c) Phenothiazine

d) Pyridine.

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iii) Griseofulvin is obtained from

- a) *Streptomyces griseofulvum*
- b) *Saccharomyces cerevisiae*
- c) *Penicillium griseofulvum*
- d) None of these.

iv) Introduction of an allyl moiety at N-17 position of morphine ring leads to development of

- a) Partial agonism b) Inverse agonism
- c) Agonism d) Antagonism.

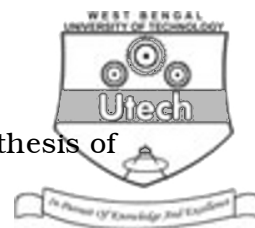
v) Photolithography technique is employed for

- a) Identification of active component
- b) Isolation of active component
- c) Synthesis of peptides
- d) None of these.



- vi) Wang resin is used in
- a) Combinatorial synthesis
 - b) Peptide synthesis
 - c) Conventional synthesis
 - d) All of these.
- vii) All the antifungal antibiotics contain
- a) Peptide linkage
 - b) Heterocyclic system
 - c) Macrocyclic lactone
 - d) None of these.
- viii) The principal active alkylator formed from cyclophosphamide is
- a) Aldophosphamide
 - b) 4-Keto cyclophosphamide
 - c) 4- Hydroxy cyclophosphamide
 - d) Phosphoramidate mustard.
- ix) Which one of the following is glycopeptide antibiotic
- a) Bleomycin
 - b) Actinomycin D
 - c) Mithramycin
 - d) Mitomycin.

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- x) Aldol condensation is used in the synthesis of
- a) Ethionamide
 - b) PAS
 - c) Ritampin
 - d) None of these.
- xi) Glyoxal is used in the synthesis of
- a) Pyrazinamide
 - b) INH
 - c) Ofloxacin
 - d) All of these.
- xii) Which one of the following drugs is considered as mitotic spindle poison ?
- a) Vincristine
 - b) Vinblastine
 - c) Paclitaxel
 - d) Etoposide.



GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following.

3 × 5 = 15

2. Write briefly about the Nincal alkaloids.
3. Write down the advantages of combinatorial synthesis.
4. Write down the syntheses of any *two* of the following :
 - i) Ketoconazole
 - ii) Econazole
 - iii) Fluconazole
 - iv) Ethionamide.
5. Write in brief about the different polymers and linkers used in solid phase synthesis.
6. Write a short note on 'Lepra reactions'.

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GROUP – C

(Long Answer Type Questions)

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

7. a) Classify anti-cancer agent with structural example of one compound from each group.

b) Explain the mechanism of action of cyclophosphamide with structures.

c) Match the following drugs with their starting compounds :

- | | |
|------------------|-----------------------|
| i) Isoniazide | a) Diethyl oxalate |
| ii) Pyrazinamide | b) Anthranilic acid |
| iii) Ethambutol | c) Glyoxal |
| iv) PAS | d) 4-Picoline |
| v) Ethionamide | e) 2-amino-1-butanol. |

6 + 4 + 5

8. What are the major prerequisites for solution phase synthesis ? Write in brief about the different deconvolution techniques available.

3 + 12

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6



9. a) Classify antitubercular drugs with examples.
- b) Write down the combinations of antitubercular drugs used for the treatment of tuberculosis in pregnant women.
- c) Write down the synthesis of the following :
- i) Isoniazide
 - ii) P-amino salicylic acid
 - iii) Pyrazinamide. 4 + 2 + (3 × 3)
10. a) How do you classify 'Antimetabolites' ?
- b) Give the structure, chemical name and uses of the following :
- i) Methotrexate
 - ii) 6-Mercaptopurine
 - iii) 5-Fluorouracil. 3 + (4 × 3)
11. a) Write in detail the structure activity relationship of morphine alkaloids.
- b) Write in detail about the various techniques adopted for the isolation of active component from the mixture of combinatorial synthesis. 7 + 8

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