



Name :

Roll No. :

Invigilator's Signature :

**CS/M.Pharm/SEM-1/MPT-103(1)/2009-10
2009**

ADVANCED PHARMACEUTICAL CHEMISTRY-I

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) A phenanthrene ring containing antimalarial agent is

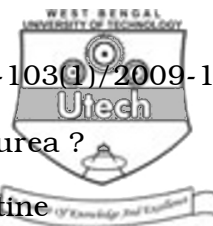
- a) tafenoquine b) mepacrine
c) halofantrin d) atovaquone.

ii) The most common site of alkylation of DNA is

- a) N-7 position of guanine
b) N-3 position of guanine
c) N-1 position of guanine
d) N-9 position of guanine.



- iii) Isatin and methyl iodide are used as starting material for the synthesis of
- a) acyclovir b) idoxuridine
c) methisazone d) rimantadine.
- iv) Which one of the following nucleoside reverse transcriptase inhibitors is a purine analogue ?
- a) Didanosine b) Lamivudine
c) Zalcitabine d) Stavudine.
- v) Value of B_{\max} can be determined from the of the Scatchard plot.
- a) x -intercept b) y -intercept
c) slope d) all of these.
- vi) Strength of ionic bond between drug and receptor lies roughly between
- a) 50 – 150 kcal/mole b) 2 – 5 kcal/mole
c) 5 – 10 kcal/mole d) 0.5 – 1 kcal/mole.
- vii) Ritonavir is synthesized starting from
- a) Epichlorhydrin
b) Dioxolane
c) Hydrocinnamyl chloride
d) Phenyl alanine.
- viii) A free radical alkylating drug is
- a) carmustine b) thiotepa
c) procarbazine d) altretamine.



- ix) Which one of the following is not nitrosourea ?
- a) Carmustine b) Semustine
c) Estramustine d) Chlorozotocin.
- x) 1, 2, 4 – Trioxane ring is present in the structure of
- a) Paluther b) Docetaxel
c) Methisazone d) FR 900098.
- xi) Paclitaxel is a highly functionalised
- a) monoterpenoid b) diterpenoid
c) triterpenoid d) sesquiterpenoid.
- xii) Opioid receptor binding is modulated by
- a) Na⁺ b) Cl⁻
c) Mg²⁺ d) none of these.

GROUP – B

(Short Answer Type Questions)

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

2. Write a brief note on etoposide & teriposide.
3. Account for pH-partition hypothesis (theory).
4. Write notes on Clark occupation theory.
5. Write in brief about the role of stereochemistry in determining drug-receptor interaction with illustrative examples.
6. Write a note on structural modification of artemisinin to obtain its derivatives.



GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following.

3 × 15 = 45

7. a) What do you mean by neoplasm ? What are the different types of malignant neoplasm ?
- b) Write a detail account on the development of paclitaxel derivatives as newer antineoplastic agents. 1 + 2 + 12
8. "Site specific delivery can be better achieved by pro-drug approach." Elaborate with several examples.
9. Define the terms 'potency' & 'efficacy'. From drug-receptor complex show that
- $$f = \frac{[D]}{K_D + [D]} \cdot$$
10. Illustrate the use of venoms and toxins as lead compound. Write a short note on selective optimization on site activities. 10 + 5
11. a) Give a classification of anti-viral agents on the basis of their mode of action.
- b) Write shortly on the synthesis, mode of action and therapeutic uses of any two of the following compounds amantadine, zidovudine, acyclovir. 5 + (5 + 5)