Name : .....

Roll No. : .....

Invigilator's Signature : .....

CS/M.Pharm/SEM-1/MPT-103(1)/2010-11

2010-11

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) Which of the following compounds is obtained from *Streptomyces antibioticus* ?

   a) Vidarabine b) Methisazone

   c) Rimantadine d) Didanosine.

   ii) The enzyme aromatase is involved in the conversion of

   a) angiotensin I to angiotensin II

   b) androgen to estrogen

   c) dopa to dopamine

   d) progvanil to cyclogvanil.

iii) Acridin containing antimalarial drug is

a) Mefloquine b) Quinacrine

c) Halofantrine d) Chloroquine.

iv) The antiviral drug with no heterocyclic ring system, is

a) Nelfinarvin b) Loviride

c) Troviridine d) Zidovudine.

v) Ritonovir is synthesized starting from

a) Epicholrhydrin

b) Dioxolane

c) Phenylalanine

d) Hydrocinnamyl chloride.

vi) The antiviral drug which is thiazole analogue is

a) Nelfinavir b) Ritonovir

c) Saquinavir d) Didanosine.

vii) Acetyl chloride, cyclo hexene and chlorobenzene are used as starting materials for the synthesis of

a) fosmidomycin b) arteether

c) atovaquone d) tafenoquine.

viii) Etoposide and teniposide are the derivatives of

a) podophyllotoxin b) artemisinin

c) paclitaxel d) none of these.

ix) When substrate concentration is very much less than Km, then Vi will be proportional to

a) V_{max}

b) substrate concentration

c) K_{max}

d) all of these.

x) An example of drug discovery without a lead, example is

a) librium b) random screening

c) non-random d) none of these.

xi) Artemisinin is a derivative of

a) 1, 4-benzodiazepine

b) 1, 2,-benzodioxepin

c) 1, 4-napthoquinone

d) 9-phenonthrenemethanol.

xii) Which of the following models fails to explain the stabilization of transition state that enzyme achieves ?

a) Induced fit model b) Lock and key model

c) Both (a) & (b) d) None of these.

GROUP – B

(Short Answer Type Questions)

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

2. What is Hill equation ? In which condition this equation is applied ? Explain the empirical parameter (n) used in Hill equation.

3. Enumerate briefly about SAR of paclitaxel derivative anticancer drugs.

4. Explain how the examination of melabolites of a drug can lead to generation of lead compounds. Illustrate your answer with suitable example.

5. Derive the Michaelies-Menten equation.

6. Write a note on 'Bio-isosterism'.

GROUP – C

(Long Answer Type Questions)

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

7. Describe drug receptor relationship according to clerk occupancy theory. Write about conformational changes during enzyme substrate binding. 10 + 5

8. a) What are the different types of drug design ? Explain briefly.

   b) Write a short note on analog design.

   c) What do you mean by soft drugs ? Explain shortly. 5 + 6 + 4

9. Write down the chemical classification of antimalarials. Describe the lifecycle of malarial protozoa. Write the M.O.A. of chloroquine. Discuss the SAR of 8 aminoquinolines. Write the synthetic pathway of pamaquine. 4 + 3 + 2 + 3 + 3

10. "Site specific delivery can be better achieved by pro-drug approach." Elaborate with examples.

11. Outline the synthesis, mode of action and therapeutic uses of the following compounds (any *three*) : 3 × 5

    Acyclovir, Vidarabine, Rimantadine, Methisazone, Zidovudine.