



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* ?

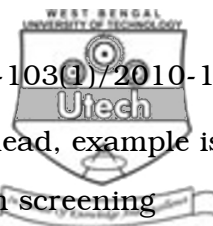
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|----------------|----------------|
| a) Vidarabine | b) Methisazone |
| c) Rimantadine | d) Didanosine. |

ii) The enzyme aromatase is involved in the conversion of

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|------------------------------------|
| 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) Nelfinavir b) Loviride
c) Zidovudine d) Zidovudine.
- v) Ritonovir is synthesized starting from
- a) Epichlorhydrin
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 K_m , then V_i 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
- librium
 - random screening
 - non-random
 - none of these.
- xi) Artemisinin is a derivative of
- 1, 4-benzodiazepine
 - 1, 2,-benzodioxepin
 - 1, 4-napthoquinone
 - 9-phenonthrenemethanol.
- xii) Which of the following models fails to explain the stabilization of transition state that enzyme achieves ?
- Induced fit model
 - Lock and key model
 - Both (a) & (b)
 - None of these.

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following. $3 \times 5 = 15$

- What is Hill equation ? In which condition this equation is applied ? Explain the empirical parameter (n) used in Hill equation.
- Enumerate briefly about SAR of paclitaxel derivative anticancer drugs.
- Explain how the examination of melabolites of a drug can lead to generation of lead compounds. Illustrate your answer with suitable example.
- Derive the Michaelies-Menten equation.
- Write a note on 'Bio-isosterism'.



GROUP – C

(Long Answer Type Questions)

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

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.
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