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OCH 552

IV Semester M.Sc. Degree Examination, September/October 2022
(CBCS : 2016 – 17 Syllabus) (Freshers & Repeaters)
ORGANIC CHEMISTRY
Medicinal Chemistry

Time : 3 Hours

Max. Marks : 70

Instructions : 1) Answer Part – **A** and **any four** questions from Part – **B**.
2) Figures to the **right** indicate marks.

PART – A

1. Answer **all** the following sub-divisions. **(9×2=18)**
- a) What are proprietary and non-proprietary names ?
 - b) What do you mean by rational approach to drug design ? Give any three rational approaches.
 - c) Formulate the synthesis of mefenamic acid and mention its clinical use.
 - d) Write the structures of two cardiovascular drugs.
 - e) Distinguish between malignant and non-malignant tumors.
 - f) List the important factors that affect the replication of viruses.
 - g) What are antibiotics ? Draw the structure of cephalosporine-C.
 - h) What happens when Vitamin B₁ is treated with sodium sulfite solution saturated with sulfur dioxide ?
 - i) What are prostaglandins ? Write their biological role.

PART – B

Answer **any four full** questions. **(4×13=52)**

2. a) Explain the variation method of drug design.
b) Describe occupancy theory of drug action.
c) What are analogues and prodrugs ? Explain with suitable examples.

(6+4+3=13)

P.T.O.



3. a) What are drugs ? How are they classified ?
b) Give the synthetic protocol for thiopental sodium. Mention its clinical uses.
c) How is dibucaine hydrochloride synthesized ? **(6+4+3=13)**
4. a) What are cardiovascular drugs ? How are they classified ? Give the synthesis and mode of action of methyl dopa.
b) Write the synthesis of chloroquine phosphate.
c) Explain the synthesis and mode of action of fluorouracil. **(6+4+3=13)**
5. a) What are antineoplastic agents ? Give their classification and write the synthesis of Methotrexate.
b) Outline the synthesis and explain the mode of action of diazoxide.
c) How do you synthesize methisazone ? Give its mode of action. **(6+4+3=13)**
6. a) Discuss the steps involved in the determination of structure of chloramphenicol.
b) Outline the synthesis of Penicillin – V.
c) How do you arrive at the structure of Vitamin C ? **(5+4+4=13)**
7. a) Explain the steps involved in the total synthesis of PGE₁.
b) How is the structure of Vitamin A₁ established using chemical methods ?
c) How is the structure of PGE₂ established using chemical methods ? **(5+4+4=13)**
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