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CHS 504

Third Semester M.Sc. Degree Examination, December 2018
CHEMISTRY
Medicinal and Natural Products Chemistry
(New Syllabus) (CBCS : 2016 – 17 Syllabus)

Time : 3 Hours

Max. Marks : 70

Note : i) Answer Part – A and **any four full** questions from Part – B.
ii) Figures to the **right** indicate marks.

PART – A

1. Answer **all** the following sub-divisions. **(9×2 = 18)**
- a) Give any four characteristics of an ideal drug.
 - b) What is rational approach to drug design ? Give any three rational approaches.
 - c) Outline the synthesis of mefenamic acid.
 - d) What are antineoplastic agents ? Give two examples.
 - e) Draw the structures of following drugs and mention their uses.
(i) Dapsone (ii) Pamaquine.
 - f) Distinguish between malignant and non-malignant tumors.
 - g) State special isoprene rule. Indicate the isoprene units in α -pinene.
 - h) What is Emde degradation ? Illustrate its use in alkaloid chemistry.
 - i) What is Diel's hydrocarbon ? How the presence of Diel's hydrocarbon skeleton is established in steroids ?

PART – B

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

2. a) What are analogues and prodrugs ? Explain with suitable examples.

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- b) Describe occupancy and induced fit theories of drug action.
 - c) What are antipyretic analgesics ? Outline the synthesis and mode of action of cinchophen. **(3+6+4=13)**
 3.
 - a) What are general anaesthetics ? How are they classified ? Outline the synthesis of thiopental sodium.
 - b) Describe variation method of drug designing.
 - c) Furnish the synthesis of Lignocaine hydrochloride. **(5+5+3=13)**
 4.
 - a) Formulate the synthesis of chloroquine phosphate.
 - b) Write the synthesis of fluorouracil. Discuss its mechanism of action.
 - c) What are cardiovascular drugs ? Sketch the synthesis of methyl dopa. **(4+5+4=13)**
 5.
 - a) Give a brief account of antiviral drugs.
 - b) Discuss the synthesis and mode of action of following drugs.
 - i) Methotrexate
 - ii) Pyrimethanin.**(5+8=13)**
 6.
 - a) Describe the steps involved in the structural elucidation of papaverine.
 - b) Write the synthesis of camphor.
 - c) How do you fix up the positions of three double bonds in zingiberene ? **(6+4+3=13)**
 7.
 - a) How do you account for the position and structure of the side chain in cholesterol ?
 - b) Give a method for the synthesis of progesterone.
 - c) Explain the various steps used in the structural elucidation of adrenaline. **(4+4+5=13)**
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