



M.Sc. (Final)

Term End Examination, 2017-18

CHEMISTRY

Group - B (I)

Paper - III

Chemistry of Natural Products and Medicinal Chemistry

Time : Three Hours] [*Maximum Marks* : 100

[Minimum Pass Marks : 36

Note : Answer any **five** questions. The figures in the right-hand margin indicate marks.

1. (a) What are terpenoids? Classify the following as to which class of terpenoids they belong to : 2+2
- (i) Citral
- (ii) Methane

(2)

- (b) What is the TUPAC name of isoprene ?
What is isoprene rule ? 4
- (c) How the structure of α -terpineol is elucidated ? 12
2. (a) Give an account of chemical evidences which establish the structure of nicotine. 12
- (b) Describe the application of the following degradation in the structure elucidation of alkaloids : 8
- (i) Hoffman degradation
- (ii) Emde degradation
3. (a) Give the synthesis of the following : 10
- (i) Testosterone
- (ii) Estrone
- (b) What are Steroids ? Discuss the position of the following in cholesterol : 10
- (i) Angular Methyl group
- (ii) Double bond and hydroxyl group
4. (a) What are Anthocyanins ? How would you distinguish anthocyanin, flavones and flavonoids with the help of simple laboratory reagent ? 8
- (b) Outline the various steps involved in the structural elucidation of quercetin. Confirm the structure by synthesis. 12

(3)

5. (a) What are anti-anxiety drugs ? How these drugs reduces anxiety ? 6
- (b) Differentiate among hypnotics, sedatives and anti-convulsants by giving examples. 6
- (c) Write the synthesis of chloramphenicol 8
6. (a) What do you understand by cancer chemotherapy ? What are the recent development in cancer chemotherapy ? 10
- (b) Discuss the role of alkylating agent and anti-metabolites in the treatment of cancer.
7. (a) Explain the different types of cardiovascular diseases. 10
- (b) Give structure, synthesis and mode of action of the following cardiovascular drugs : 10
- (i) Sorbitrate
- (ii) Verapamil
8. (a) Give some examples of local antiinfective drugs. How these drugs affect against infections ? 8
- (b) Write the synthesis of the following drugs : 12
- (i) Norfloxacin
- (ii) Ethambutol

(4)

9. (a) What do you mean by the term anti-psychotic drugs? Write down the structural formulae and use of the following : 10
- (i) Alprazolam
 - (ii) Diazepam
 - (iii) Phenytoin
 - (iv) Barbitrates
- (b) Write notes on the following : 10
- (i) Neurotransmitters
 - (ii) CNS depressants
10. What do you understand by the term Pharmacokinetics? Explain important pharmacokinetic parameters in defining drug disposition and in therapeutics. 20
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