



AF-3520

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)

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| (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 :

(i) Hoffman degradation
(ii) Emde degradation | 8 |
| 3. (a) Give the synthesis of the following :

(i) Testosterone
(ii) Estrone | 10 |
| (b) What are Steroids ? Discuss the position of the following in cholesterol :

(i) Angular Methyl group
(ii) Double bond and hydroxyl group | 10 |
| 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)

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| 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 :
(i) Sorbitrate
(ii) Verapamil | 10 |
| 8. (a) Give some examples of local antiinfective drugs. How these drugs affect against infections ? | 8 |
| (b) Write the synthesis of the following drugs :
(i) Norfloxacin
(ii) Ethambutol | 12 |

(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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