

AE-764

M. Sc. (Final)
Term End Examination, 2016-17

CHEMISTRY

Optional

Group - B

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) How would you proceed to detect (i) unsaturation (ii) and isopropylidene grouping in an unknown terpenoid ? 10
(b) What are carotenoids? How will you prove that β carotene has a symmetrical structure ? Give the synthesis of carotene. 10

(2)

2. (a) What are alkaloids ? How are they classified ? 5

(b) How are alkaloids isolated from plant materials ? 5

(c) What methods are employed for determining the structure of an alkaloids ? 10

3. (a) What are steroids ? 5

(b) Discuss the relationship between sterols and bile acids. 5

(c) How are the positions of a double bond and hydroxyl group in a sterol determined ? Illustrate your answer giving suitable examples. 10

4. Write notes on the following : 5×4

(a) Hirsutidin biosynthesis of flavonoids

(b) Biosynthesis of steroids

(c) Acetate pathway and shikimic acid pathway

(d) 5β -cholanic and 5α -cholanic acid

5. Explain with examples : 5×4

(a) Isoprene rule

(b) Role of alkaloids in plants

(c) Diels hydrocarbons and stereochemistry

(d) Glycosides of flavones and flavonols

(3)

6. Explain the following : 5×1

- (a) Distribution and disposition of drugs excretion and elimination 6
- (b) Drug Absorption 4
- (c) Pharmacokinetics of elimination 6
- (d) Pharmacokinetics in drug development process 4

7. Explain any **four** of the following : 5×4

- (a) Mechanism of tumor formation
- (b) Role of alkylating agents in treatment of cancer
- (c) Synthesis of uracil
- (d) Recent development in cancer chemotherapy
- (e) Hormones and DNA intercalating agents

8. Describe syntheses of the following : 5×4

- (a) Verapamil
- (b) Sorbitrate
- (c) Quiridine
- (d) Methyldopa

(4)

9. Write notes on the following : 5×4

- (a) Classification of local anti-infective drugs with examples
- (b) General mode of action in various drugs
- (c) PAS
- (d) Chloroquine and primaquine

10. Explain the following : 5×4

- (a) Various stages of Anaesthesia
- (b) Techniques of inhalation of Anaesthetics
- (c) Classification and mechanism of antidepressants
- (d) Classification of various antibiotics with examples
