



**H-303001**

Seat No. \_\_\_\_\_

**M. Sc. (Sem. III) Examination**

**November - 2022**

**MSC1C301 : Natural Products & Bio-molecules**  
**(New Course)**

**Time : 3 Hours]**

**[Total Marks : 70**

**Instructions :** (1) All questions are compulsory.  
(2) Figures to Right indicate full marks.

**1 (a) Answer the following :**

- (i) What are Natural Pigments ? Give classification of Natural Pigments based on structural unit. **4**
- (ii) Give structure relationship between flavanol and cyanidin chloride. **3**

**OR**

- (i) Give general method for the synthesis of anthocyanidin. **4**
- (ii) Give synthesis of Quercetin. **3**

**(b) Answer the following:**

- (i) Differentiate Haem & Haemin. Discuss the reductive degradation of Haemin with tin & HCl. **4**
- (ii) Give one synthesis of dipyrrolyl-methane. **3**

**OR**

- (i) Discuss acidic and basis hydrolysis of Chlorophyll. **4**
- (ii) Give synthesis of opso payroll. **3**

**2 (a) Answer the following :**

- (i) Prove the structure of Meroquinine. **4**
- (ii) Discuss the presence and position of double bond in Vitamin-D<sub>2</sub>. **3**

**OR**

- (i) Give Hoffman's degradation of Emetine. **4**
- (ii) Discuss the structure of thiazole part of Vitamin B<sub>1</sub>. **3**

- (b) Answer the following :
- (i) Give evidence for the size of ring B in Colchicine. 4
  - (ii) Prove the structure of Pantothenic acid. 3

**OR**

- (i) Prove the presence of indole cycle in strychnine. 4
- (ii) Give synthesis of L-ascorbic acid from L-xylose. 3

- 3 (a) Answer the following :

- (i) Discuss the presence and position of double bond in Cholesterol. 4
- (ii) Discuss chemistry of Bile acids. 3

**OR**

- (i) Discuss about stigmasterol. 4
- (ii) Give evidence for the nature and position of side chain in Ergosterol. 3

- (b) Answer the following :

- (i) What are Sex hormones ? Classify them giving one example of each. 4
- (ii) Prove the presence of phenolic - OH in Oestrone. 3

**OR**

- (i) Give degradation product of oestradiol. 4
- (ii) Give synthesis of progesterone from diosgenin. 3

- 4 (a) Answer the following :

- (i) Discuss the presence and position of -COOH group in Abietic acid. 4
- (ii) Discuss the structure of Carvone. 3

**OR**

- (i) Discuss the structure of Cadinene. 4
- (ii) Discuss the presence and position of double bond in Abietic acid. 3

- (b) Answer the following :
- (i) Discuss Biosynthetic studies on tri-terpenoids and tetra-terpenoids. 4
  - (ii) Give synthesis of Carvone. 3

OR

- (i) Discuss the structure of Farnesol. 4
- (ii) Give synthesis of Zingiberine. 3

5 Answer in following (short questions) 14

- (1) Give chemical name of cyanidin choride.
- (2) Give two example of co-pigments.
- (3) Which colour obtain by flavanol react with con.  $H_2SO_4$  ?
- (4) How many isomer possible in meso Porphyrin ?
- (5) Quinine is an alkaloid of which class ?
- (6) Give structural formula of Emetine.
- (7) Which disease is caused by Vitamin-D.
- (8) What is the origin of Biotin ?
- (9) What is Blank's rule ?
- (10) Give the structural formula of cholesterol.
- (11) How many types of sex hormones ? Give their name.
- (12) How will you detect - CHO group in terpenoids ?
- (13) Give one example of di-terpene.
- (14) How many carbon present in natural crytone ?