

16-6-22
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Exam. Code : 210404
Subject Code : 4886

M.Sc. Chemistry 4th Sem. (Batch 2020-22)
NATURAL PRODUCTS
Paper : Course-XXIV

Time Allowed—3 Hours] [Maximum Marks—75

Note :— Attempt *five* questions in all, selecting at least one question from each section. The *fifth* question may be attempted from any section. All questions carry equal marks.

SECTION—A

- (a) Discuss the bio-synthetic pathway for the synthesis of 6-methyl salicylic acid. 7
- (b) Sketch the biosynthesis of α -pinene and thujene using Geranyl-pyrophosphate pathway. 8
- (a) Discuss the chemistry of Abietic acid. 10
- (b) State and explain Isoprene rule. 5

SECTION—B

- Sketch the synthesis of Haemin. 15
- (a) Starting from Succinimide, discuss the synthesis of nicotine and confirm its structure. 8

- (b) Discuss the synthesis of Progesterone using cholesterol as precursor. 7

SECTION—C

5. (a) Sketch the synthesis of Chloramphenicol starting from 4-nitroacetophenone. 8
(b) Describe the synthesis of Prostaglandin E1. 7
6. (a) What are secondary structures of proteins? Discuss the α -helix structure in detail. 7
(b) What are Prostaglandins? Discuss in brief their nomenclatures. 8

SECTION—D

7. (a) Taking glucose as an example, how can methylated sugars be used to determine the ring size of monosaccharides? 10
(b) Enlist the differences between starch and cellulose. 5
8. (a) Discuss the process of transcription. 8
(b) Discuss the primary and secondary structure of nucleic acids. 7