

Code No. 3171/CORE

**FACULTY OF SCIENCE**  
**M.Sc IV-Semester Examination, May/June 2018**

**Subject : Chemistry (Organic Chemistry)**  
**Paper : IV (A) Advanced Natural Products**

Time : 3 Hours

Max Marks : 80

**Note: Answer all questions from Part A and Part B. Each question carries 8 marks in Part – A and 12 marks in Part – B.**

**Part-A (4X8=32 MARKS)**  
**(Short Answer Type)**

1. a) Discuss about methods of isolation and identification of biosynthetic precursors  
 b) Describe the biosynthesis of flavonoids
2. a) Write the stereochemical structure of cholesterol and give numbering.  
 b) How do you determine the ether linkage in morphine ?
3. a) Explain IR, H-NMR, <sup>13</sup>C-NMR and in mass spectra of coumarines.  
 b) Discuss the INEPT of menthol
4. a) Describe the stereoselective synthesis of biotin.  
 b) Discuss on Corey's synthesis of paeoriflorin

**Part-A (4X12=48 MARKS)**

5. a) Write about chemical degradation methods in the study of biosynthesis.  
 b) Describe the biosynthesis of  $\beta$ -amyrin  
**OR**  
 c) Discuss the use of radioisotopes in the study of biosynthesis.  
 d) Describe the biosynthesis of aminoacids by shikimic acid pathway.
6. a) Give an account on the determination of position of double bond and hydroxy group in cholesterol.  
 b) Describe the structure determination of rotenone  
**OR**  
 c) Discuss on structure elucidation of abiotic acid.  
 d) Explain briefly about the structure determination of reserpine
7. a) Explain how flavones and isoflavones are differentiated by <sup>1</sup>H NMR and <sup>13</sup>CNMR spectral data.  
 b) Draw HETCOR & NOE spectra of geraniol and explain?  
 c) Explain 2D-INADEQUATE Spectrum of  $\alpha$ -picoline and  $\beta$ -methyl tetrahydrofuran.  
 d) Discuss about spectral properties of quinolines and isoquinolines.
8. a) Explain the Corey's prostaglandin E<sub>2</sub> synthesis  
 b) Give the synthesis of L-hexoses  
**OR**  
 c) Give Taks ago synthesis of menthol.  
 d) Describe the synthesis of Dynemicin A.

\*\*\*\*\*