Code No. : **9530**

FACULTY OF SCIENCE
M.Sc. IV Semester Examination, May/June 2012
ORGANIC CHEMISTRY (Paper – IV)
Advanced Natural Products (Elective)

Time: 3 Hours] [Max. Marks : 80

***Note** : Answer **all** questions.*

SECTION – A **(4×8=32 Marks)**

1. a) What are the differences between laboratory synthesis and biosynthesis ?
   b) How the spectroscopic methods are useful in determining the position of labels in the labeled natural products ?

2. a) Discuss the medicinal importance of alkaloids.
   b) How do you explain that morphine has a phenanthrene basic skeleton ?

3. a) Write the structures of
      i) androsterone
      ii) estradiol
      iii) progesterone
      iv) aldosterone
   b) How can you establish the structure of side chain of cholesterol ?

4. a) What are the physiological properties of prostaglandins ?
   b) Discuss the synthesis of Haem.

SECTION – B (**Essay type**) **(4×12=48 Marks)**

5. a) Explain the biosynthesis of aromatic compounds by shikimic acid pathway.
   b) Discuss the biosynthesis of cholesterol.

   OR

   c) Discuss the importance of radioactive isotopes in determining the biosynthetic mechanism in detail.
   d) Write the biosynthesis of flavonoids.

6. a) Give a brief account of the structure elucidation of reserpine.

   b) Write the synthesis of reserpine.

   OR

   c) Write the total synthesis of morphine.

   d) Discuss the structure determination abetic acid.

7. a) How do you determine the structure of androsterone by chemical method ?

   b) Discuss the synthesis of testosterone.

   OR

   c) How can you establish the structure of progesterone ?

   d) Write the synthesis of estrone.

8. a) Describe the stereoselective synthetic methods for PEG1α and PEG2α.

   b) Discuss the structure determination of rotenone.

   OR

   c) Give a brief account of the structure determination of PEG1α and PEG2α.

   d) Discuss the synthesis of rotenone.
