



**KT-1801**

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

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

**April/May - 2013**

**CHN-701(O) : Organic Chemistry : Paper - I**

Time : 3 Hours]

[Total Marks : 70

- 1** Answer any two of the following : **14**
- (1) Discuss the structure of Amylopectin.
  - (2) Write short note on Photosynthesis of Carbohydrates.
  - (3) Write a short note on Nucleotides.
  - (4) Give two synthesis of both :
    - (i) Caffeine and
    - (ii) Uric acid.
- 2** Answer any two of the following : **14**
- (1) What is conformation ? Discuss conformational analysis of Dimethyl-cyclohexane.
  - (2) What is configuration ? Discuss the conformations of bicycle [2, 2, 2] octane.
  - (3) Discuss in detail conformational analysis of Hexachlorocyclohexane.
  - (4) Discuss the conformations of bicyclo [1, 1, 1] pentane and bicyclo [2, 1, 1] hexane.
- 3** Answer any two of the following : **14**
- (1) Discuss the constitution-chemistry of Ergosterol.
  - (2) Explain points to establish the structure of Oestradiol.
  - (3) Discuss the constitution of progesterone.
  - (4) Discuss the structure of cortisone.

4 Answer any two of the following : 14

- (1) Explain Nuclear overhauser effect with suitable example.
- (2) What is NMR shift reagent ? Discuss mechanism of action of shift reagent with suitable example.
- (3) Explain  $^1H - ^1H$  COSY and Double-Quantum Filtered  $^1H - ^1H$  COSY.
- (4) Write a note  $^1H - ^{13}C$  COSY : HETCOR NMR spectroscopy.

5 Answer any seven of the following in brief : 14

- (1) Draw ONLY representative structure of Amylose.
- (2) Give ANY TWO differences between Cellulose and Starch.
- (3) Give any ONE method to synthesize Adenine.
- (4) What is "Conformer" ? Explain how it is related with "Conformations" ?
- (5) Draw only structure of Bicyclo [2, 2, 1] heptane and give its common name (if any).
- (6) What are steroids ? Give any one characteristic property of steroids.
- (7) What are hormones ? Give classification of sex hormones.
- (8) Draw only structure of Lanosterol and give numbering in the structure of Lanosterol.
- (9) Give list of types of Correlation Spectroscopy.
- (10) What is the difference between CW and FT NMR ?