

Roll No. ....

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**B. Pharmacy (Sem. - 2<sup>nd</sup>)****PHARMACEUTICAL CHEMISTRY - III (Organic Chemistry - I)****SUBJECT CODE : PHM-1.2.4.****Paper ID : [D0110]**

[Note : Please fill subject code and paper ID on OMR]

**Time : 03 Hours****Maximum Marks : 80****Instruction to Candidates:**

- 1) Section - A is **Compulsory**.
- 2) Attempt any **Four** questions from Section - B.
- 3) Attempt any **Three** questions from Section - C.

**Section - A****Q1)****(15 x 2 = 30)**

- a) Draw *cis* and *trans* isomers of 2-butene.
- b) What is the physical significance of  $\psi$ ?
- c) What are the basic differences between atomic and molecular orbitals?
- d) Write about sp hybridization with one example.
- e) What are various intermolecular forces?
- f) Arrange the following as per their acidity order :  $\text{CH}_3\text{COOH}$ ,  $\text{CF}_3\text{COOH}$ ,  $\text{FCH}_2\text{COOH}$ .
- g) How do enantiomers differ from diastereomers?
- h) Give one chemical test to differentiate primary, secondary and tertiary alcohols.
- i) What happens when 1-propene undergoes hydroboration?
- j) How can one prepare primary alcohols from alkenes?
- k) What is Hückle's rule?
- l) Give Perkin reaction.
- m) Comment on shape of water molecule based on hybridization.
- n) Why terminal alkynes are more acidic than alkanes?
- o) What are carbenes?

**Section - B**

(4 x 5 = 20)

- Q2)** What is optical activity? How it is measured?
- Q3)** Discuss orientation and reactivity of bromination and chlorination of alkanes.
- Q4)** Explain conformational isomerism in cyclohexane.
- Q5)** What are the essential differences between  $E_1$  and  $E_2$  elimination reactions.
- Q6)** Give structure, properties and reactions of dienes.

**Section - C**

(3 x 10 = 30)

- Q7)** Write note on :
- (a) Epoxides.
  - (b) Meso compounds.
- Q8)** Give structure, shape, generation and reactions of carbanion.
- Q9)** Write about various theories of acids and bases with examples.
- Q10)** Write about functional derivatives of carboxylic acids.

