

(UG70)

Roll No. ....

S.C.No.—M/21/2005508

**B. Sc. EXAMINATION, 2021**

(Main)

(Fifth Semester)

CHEMISTRY

CH-503

Organic Chemistry

Time : 3 Hours

Maximum Marks : 30

**Note :** Attempt *Five* questions in all. All questions carry equal marks.

1. (a) Explain the principle of NMR spectroscopy. 3
- (b) Discuss the following terms : 3
  - (i) Coupling constant
  - (ii) Spin-spin coupling.

2. (a) Giving suitable example explain the concept of shielding and deshielding of protons. 3
- (b) What do you understand by the term magnetic equivalence of protons. 3
3. Discuss the PMR spectra of 1, 1-dibromoethane and ethanol. 6
4. Propose the structural formula of the compound in accordance to the given information : 6
  - (a)  $C_6H_{12}$  (one signal)
  - (b)  $C_5H_{12}$  (one signal).
5. (a) Explain the mechanism of osazone formation. 3
- (b) Explain the terms Erythro and Threo diastereomers giving suitable examples. 3
6. (a) What do you understand by the term mutarotation ? Describe its mechanism. 3
- (b) Describe the conversion of glucose into fructose. 3

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7. (a) Explain the pyranose structure. Give evidence that glucose has pyranose structure. **3**
- (b) What are Polysaccharides ? Differentiate between starch and cellulose. **3**
8. (a) What are organometallic compounds ? Describe their properties giving at least two examples. **3**
- (b) Give formation and chemical reactions of organozinc compounds. **3**
9. (a) Differentiate between Grignard reagents and organolithium reagents. **3**
- (b) Write short note on configuration of monosaccharides. **3**