

Roll No.

91530

B. Sc. (Hons.) Physics 2nd Semester
Latest Examination – April, 2018

CHEMISTRY-II

Paper : Phy-205

Time : Three Hours]

[Maximum Marks : 40

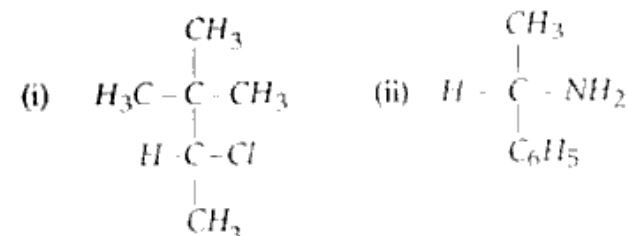
Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt five questions in all, selecting at least two questions from each Unit.

UNIT – I

- 1. (a) Define Resonance. What is the difference between resonance and isomerism ? 3
- (b) What is Inductive effect ? How does inductive effect help in explaining the relative strengths of organic acids ? 5

- 2. (a) What do you understand by chair and boat conformations ? Why is chair conformation of cyclohexane more stable than boat conformation ? 4
- (b) Assign R and S configurations to the following compounds : 4



- 3. (a) Explain the essential difference between enantiomers and diastereomers. 3
- (b) What are meso compounds ? Give one example. 2
- (c) In how many ways can the fission of a covalent bond take place ? Explain with suitable examples. 3
- 4. (a) Classify the following as nucleophiles and electrophiles :
 $\text{H}_3\text{O}^+, \text{NH}_3, \text{AlCl}_3, : \text{CH}_2, \text{BF}_3, \text{CN}^-, \text{SO}_3$ and CH_4 . 2

- (b) Explain the addition organic reactions with suitable examples. 3
- (c) Describe the delocalised chemical bond with the help of a suitable example. 3

UNIT - II

- 5. (a) What is meant by reaction intermediate ? Allyl free radical is more stable than Alkyl free radical. Explain. 4
- (b) Why is o-nitrophenol steam volatile while p-nitrophenol not ? 2
- (c) Out of acetaldehyde and acetone, which has higher boiling point and why ? 2
- 6. (a) Give the mechanism of following reactions : 6
 - (i) **Laisen-Schmidt** condensation
 - (ii) **Mannich** Reaction.
- (b) What is Tollen's reagent ? How does it help in identifying an aldehyde ? 2
- 7. (a) Why are acid amides very little reactive while acid chlorides are highly reactive ? 2

- (b) Give the mechanism of ester hydrolysis. 4
- (c) Why are amides weaker bases than amines ? 2
- 8. (a) What are the monomers of Terylene ? Explain the synthesis and uses of this polymer. 3
- (b) Why does nitrobenzene undergo electrophilic as well as nucleophilic substitution ? 3
- (c) What happens when : 2
 - (i) Aniline is treated with C_6H_5CoCl and $NaOH$.
 - (ii) Aniline is heated with concentrated H_2SO_4 .

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