



UNIVERSITY OF THE PUNJAB

B.A. / B.Sc. Part - II

Supplementary Examination - 2018

Roll No.

TIME ALLOWED: 3 Hrs.

MAX. MARKS: 40

Subject: Chemistry-II

PAPER: A (Organic Chemistry)

INSTRUCTIONS:

- Question No.1 is compulsory.
- It is compulsory to attempt at least two questions from each section.
- All questions carry equal marks.

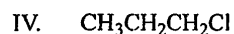
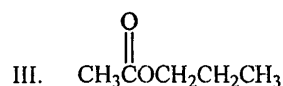
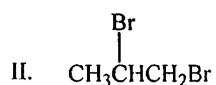
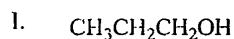
Q. No. 1: Short questions.

[4 x 2 = 8]

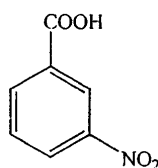
- Why iodide is a better nucleophile than chloride?
- Explain steric inhibition of resonance with example.
- Briefly explain Huckel's rule.
- Describe Lucas test.

Section I

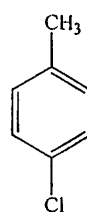
Q. No. 2: How will you synthesize propene from following compounds? Draw the complete mechanisms for all steps involved. [4 x 2 = 8]



Q. No. 3: Outline all steps with mechanisms involved in the synthesis of following compounds from benzene. [4 +4]



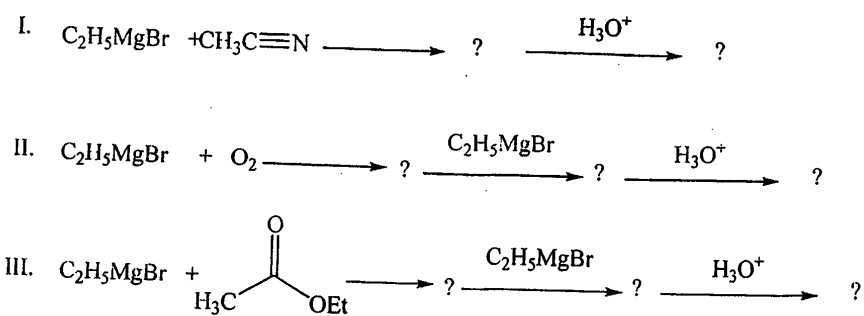
(I)



(II)

Q. No. 4: Complete the following reactions.

[2 + 3 + 3]



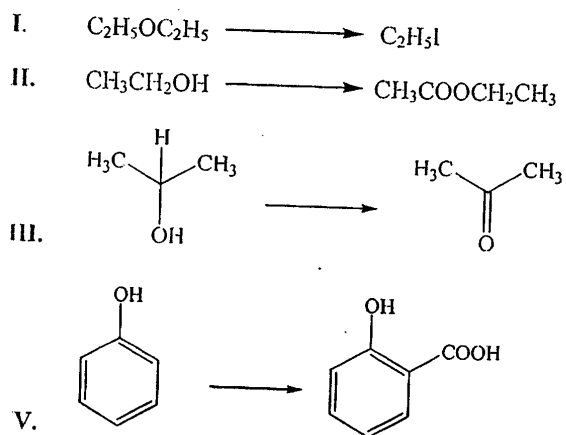
Q. No. 5:

[6 + 2]

- I. Explain how each of the following factors affects an E1 reaction:
- The structure and leaving group of the alkyl halide
 - The concentration and strength of the base
 - The solvent
- II. According to Saytzeff rule what will be the major product of E1 reaction of 2-bromobutane? Explain.

Section II

Q. No. 6: How will you manage to bring about following transformation? Draw complete mechanisms. [4 x 2 = 8]



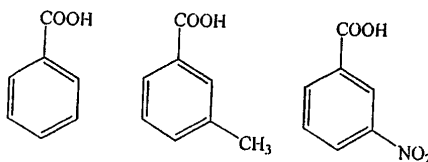
Q. No. 7: Explain the following reactions with mechanisms.

[4 + 4]

- I. Baeyer-Villiger Oxidation
- II. Cannizzaro's reaction

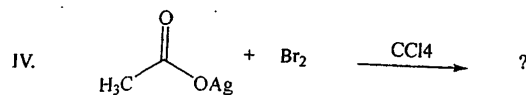
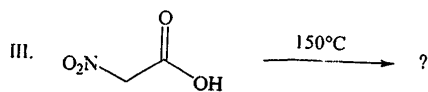
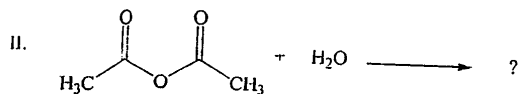
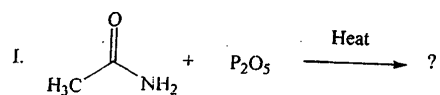
Q. No. 8:

- I. Arrange the following compounds in order of decreasing acidity, giving explanation for your order. [4]



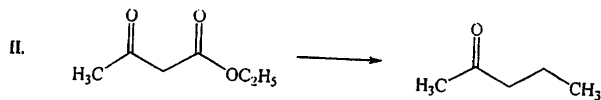
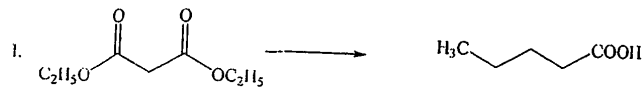
- II. Draw the products of the following reactions.

[1 x 4 = 4]



Q. No. 9: Show all the steps involved in following conversions.

[4 + 4]





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Note: Attempt FIVE questions. Q. No.1 is compulsory. Attempt at least TWO questions from each section.

- Q.1 (a) What is the basic principle of UV/Vis spectroscopy? (2)
(b) How Ozone hole is created? (2)
(c) How heat treatment affects the Brittleness of Steel? (2)
(d) What is the meaning of isoelectric point of proteins? (2)

Section-I

- Q.2 (a) What is the Principle and working of Atomic Absorption Spectroscopy? (4)
(b) Discuss SO₂ gas as primary pollutant in the Atmosphere. (4)
- Q.3 (a) "During solvent extraction, repeated extraction using small amounts of solvent are more efficient than single extraction". Justify (4)
(b) What is Photochemical Smog? Give its impact on Environment. (4)
- Q.4 (a) Deduce mathematically the equation for standard deviation. How is it related to relative standard deviation? (4)
(b) How nature of solvent affects the Electronic Transitions? (4)
- Q.5 (a) Give the Stratification of Atmosphere on the basis of Temperature and density. (4)
(b) Explain the Mean, Median and Mode with suitable examples. (4)

Section-II

- Q.6 (a) Discuss the chemical changes involved in the rotary kiln in Cement Manufacturing. (4)
(b) What are Steroids? Explain the biochemical functions of any two steroids. (4)
- Q.7 (a) Explain Hall's Electrolytic process for Aluminum Recovery. (4)
(b) Discuss heat treatment of glass and its effects. (4)
- Q.8 (a) What are peptides and polypeptides? Mention the structures of polypeptides having disulphide bridges. (4)
(b) What are Carbohydrates? Give their Classification. (4)
- Q.9 Explain detailed process of Sugar manufacturing. Also give flow sheet diagram. (8)