

PARUL UNIVERSITY
FACULTY OF APPLIED SCIENCE
M.Sc. Winter 2018-19 Examination

Semester: 3
Subject Code: 11205202
Subject Name: Redox Reactions and Organometallics

Date: 25/10/2018
Time: 10.30 am to 1.00 pm
Total Marks: 60

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

- Q.1. A) Write Brief note on (Each of 04 marks) (08)**
 (a) Explain Meerwin- Ponndorf-Verley reduction with mechanism
 (b) Explain Oppenauer Oxidation reaction.
- Q.1. B) Answer the following questions (Any two) (04)**
 (a) Do as Directed (Each of 02 marks)
 1. Write full form and draw structure of DDQ.
 2. Write full form and draw structure of DMDO.
 (b) Short note on Reduction of Nitro compounds with mechanism. (04)
 (c) Short note on Swern Oxidation (04)
- Q.2. A) Answer the following questions. (04)**
 (a) Write Short Notes on (Each of 02 marks)
 1. Oxidation reaction of Olefins with example.
 2. Principles of Catalytic Hydrogenation with example.
 (b) Short note on Prevost method. (04)
- Q.2. B) Answer the following questions (Any two) (03)**
 (a) Multiple choice questions. (Each of 01 marks)
 1. ----- can reduce only non-conjugated carbonyl group.
 a) KMnO_4 b) NaBH_4 c) Sn d) Palladium
 2. Oxidation is the process of ----- of electrons. (a) Loss (b) Gain (c) Both a & b (d) None
 3. The process of oxidation of Olefins with ozone is called----
 a) Catalysis b) Ozonolysis c) Hydrogenation d) polymerization
 (b) Write Difference between Oxidation & Reduction by three points each. (03)
 (c) Short note on Reduction of acetone with LiAlH_4 with mechanism. (03)
- Q.3. A) Write Brief note on: (Each of 04 marks) (08)**
 (a) Explain Heck reaction with mechanism
 (b) Explain Stork-Enamine Synthesis with mechanism.
- Q.3. B) Answer the following questions (Any two) (04)**
 (a) Do as directed (Each of 02 marks)
 1. Give name and formula of Wilkinson's catalyst.
 2. Give uses of Ruthenium complexes.
 (b) Short note on Darzon Condensation. (04)
 (c) Short note on Knoevenagel condensation with mechanism. (04)
- Q.4. A) Answer the following questions. (04)**
 (a) Short note (Each of 02 marks)
 1. Give name & formula of Ziegler -Natta catalyst.
 2. What is Wacker's Process with example?
 (b) Short note on 18 electron rule. (04)
- Q.4. B) Answer the following questions (Any two) (03)**
 (a) Multiple choice questions. (Each of 01 marks)
 1. Enamines are good carbon ----- (a) Nucleophiles (b) Electrophiles (c) both a & b (d) None
 2. In Mannich reaction alkylation of enols with ----- takes place
 a) Iminium ion b) Olefins c) Carboxylic acids d) None
 3. In Sonogashira Coupling, coupling of ----- with aryl or vinyl halides is performed.
 a) Vicinal diols b) Terminal Alkynes c) Alcohols d) Aldehydes
 (b) Short note on Suzuki Coupling with mechanism. (03)
 (c) Short note on Baylis Hilmann reaction with mechanism. (03)