

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) (04)
 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) (04)
 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) (03)
 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) (04)
 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) (04)
 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) (03)
 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)