

PARUL UNIVERSITY
FACULTY OF APPLIED SCIENCE
M.Sc., Summer 2017-18 Examination

Semester: 3

Subject Code: 11205202

Subject Name: Redox reactions and organometallics

Date: 23/05/2018

Time: 02:00 pm to 04:30 pm

Total Marks: 60

Instructions:

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

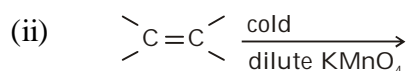
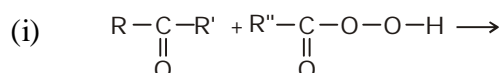
Q.1. A) Brief note (Each of 04 marks) (08)

- Explain oppenauer oxidation reaction.
- Explain oxidation reaction of olefins with examples.

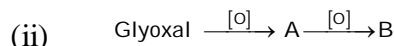
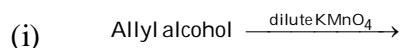
Q.1. B) Answer the following questions (Any two)

(a) Give answer shortly (04)

1. Complete it :



2. Complete it :



(b) Write oxidation reactions of alcohols (04)

(c) Write a note on oxidative decarboxylation. (04)

Q.2. A) Answer the following questions.

(a) Short note (Each of 02 marks) (04)

- Give conversion of : Ethyl alcohol from ethanal.
- Give conversion of : Propane from acetone.

(b) Explain Meerwein – pondorf reduction with mechanism (04)

Q.2. B) Answer the following questions (Any two)

(a) Do as directed (Each of 01 marks) (03)

1. Complete it : Isobutylene $\xrightarrow[\text{Ni}/\Delta]{\text{H}_2}$

2. Complete it : Ethyne $\xrightarrow[\Delta]{\text{Ni}/\text{H}_2} (\text{A}) \xrightarrow[\text{Ni}]{\text{H}_2} (\text{B})$

3. Complete it : $\text{R}-\overset{\text{O}}{\parallel}{\text{C}}-\text{R}' \xrightarrow[\text{NH}_2, \text{NH}_2,]{\text{NaOH}}$

(b) Explain reduction of nitroso compounds. (03)

(c) Discuss reduction of alkynes. (03)

Q.3. A) Brief note (Each of 04 marks) (08)

- What is wacker process : Explain with examples.
- Explain it : Sonogashira reaction.

Q.3. B) Answer the following questions (Any two)

(a) Short note (Each of 02 marks) (04)

- Give uses of Titanium complexes
- Give the structures of Tebbes reagent and ziegler-Natta Catalyst

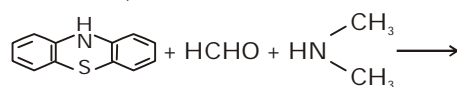
(b) Explain Heck reaction with example. (04)

(c) Write a note on Suzuki coupling (04)

Q.4. A) Answer the following questions.

(a) Brief note (Each of 02 marks) (04)

1. Complete it :



2. Write only Baylis-Hilman reaction

(b) Explain Knoevenagel condensation with mechanism. (04)

Q.4. B) Answer the following questions (Any two)

(a) Do as directed (Each of 01 marks) (03)

1. Give one example of Michael addition reaction.

2. Give one example of Mannich reaction.

3. Use of Ruthenium Complex

(b) Explain Darzens condensation reaction. (03)

(c) Explain Stork enamine synthesis process. (03)