Seat No:_____ Enrollment No:_____

PARUL UNIVERSITY

FACULTY OF APPLIED SCIENCE

B.Sc., Summer 2017-18 Examination

Semester: 3 **Date: 24/05/2018**
Subject Code: 11105202 **Time: 10:30am to 1:00pm**
Subject Name: Fundamentals of Chemistry - II **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.

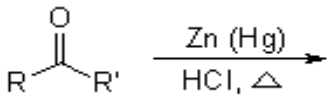
Q.1. A) Essay type/ Brief note. (4x2) (Each of 04 marks) **(08)**
(a) Explain Knovegal reaction with mechanism.
(b) Explain Perkin reaction with mechanism.

Q.1. B) Answer the following questions. (Any two)
(a) Do as directed. **(04)**
1. Explain why carbonyl compounds have lower boiling points than alcohols
2. Write a note on benzoin condensation
(b) Write about the reaction of an aldehyde or ketone with a triphenyl phosphonium ylide to give an alkene and triphenylphosphine oxide **(04)**
(c) Write a short note of condensation with ammonia and its derivatives. **(04)**

Q.2. A) Answer the following questions.
(a) Short notes on : **(04)**
1.Classification of catalysts
2.Autocatalysis
(b) Explain the mechanism of enzyme catalyst by Michalis – Menton equation **(04)**

Q.2. B) Answer the following questions. (Any two)
(a) Multiple choice questions **(03)**
1. The product formed in aldol condensation is a) a beta-hydroxy aldehyde or a beta-hydroxy ketone b) an alpha-hydroxy aldehyde or ketone c) an alpha, beta unsaturated ester d) a beta-hydroxy acid
2. The process in which catalyst has a different phase to a reaction mixture is known as a) homogeneous catalysis b) heterogeneous catalysis c) hypergeneous catalyst d) hypogeneous catalyst
3. -------- is used as a solvent in bromination reactions a) Liq HF b) Liq SO_2 c) Liq NH_3 d) None of the above

(b) Short note on **(03)**



(c) Write a short note on the structure of carbonyl group. **(03)**

Q.3. A) Brief note. (4x2) **(08)**
(a) Explain the reaction kinetics of catalyzed and non-catalyzed reactions.
(b) Explain the solubility reaction of Liq Ammonia with organic compounds, nonmetals and alkali metals.

Q.3. B) Answer the following questions. (Any two)
(a) Short note **(04)**
1. Write a short note on Catalytic converters with examples.
2. Write a short note on Catalytic poisons with examples.
(b) Write a short note on advantages and disadvantages of using liquid ammonia as a solvent. **(04)**
(c) Write a short note on properties of liquid sulphur dioxide. **(04)**

Q.4. A) Answer the following questions.

(a) Do as directed. **(04)**

1.complete the following reaction with proper explanation

$C_6H_6 + ClSO_3H \longrightarrow$

2.Explain amphoterism in liquid sulphur dioxide

(b) A short note on solubility of inorganic materials in Liq SO_2 **(04)**

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

(a) Do as directed. **(03)**

1. Draw the structure of cyclohexane carbaldehyde.
2. Write the IUPAC names of butyraldehyde and isovaleraldehyde.
3. Give examples of compounds that donate proton to NH_3 in liquid ammonia.

(b) Short note on liquid hydrogen fluoride. **(03)**

(c) Discuss the complex formation reaction in liq ammonia with an example. **(03)**