PARUL UNIVERSITY
PARUL INSTITUTE OF APPLIED SCIENCES
MID SEMESTER INTERNAL EXAMINATION, SEPTEMBER 2019

B.Sc. Semester III | **Subject: CHEMISTRY**
Paper Code: 11105202 | **Title of the paper: Fundamental of Chemistry-II**
Date: 05/ 09/2019 | **Time: 12:30-2:00 PM**

Maximum Marks: 40

Instructions:

1. **All questions are compulsory and options are given in first and second question only.**
2. **Numbers to the right of question indicate the marks of respective question.**

Q. 1 Attempt any one question of the following. **(08)**

(i) Write the enzymatic reactions for following enzymes:
(a) invertase (b) zymase (c) urease (d) maltase

(ii) Define the term solvents and classify the various types of solvents?

Q. 2 Attempt any three questions of the following. **(12)**

(i) Explain the mechanism of Enzyme catalysis.

(ii)Explain the solubility of alkali metals in liquid ammonia and their color change in the solution?

(iii) Explain the acid base reaction in liquid ammonia?

(iv)What are the characteristic properties of a solvent?

(v) Discuss few properties of liquid ammonia as a solvent?

Q. 3 Do as directed. Attempt all five questions. **(5)**

(i) _____ behaves amphoteric in liquid ammonia.

(ii)Write the suitable catalyst for a given reaction:

$$2SO_{2(g)} + O_{2(g)} \xrightarrow{Pt} 2SO_{3(g)}$$

(iii) Draw the structure of carbonyl compounds and explain in details.

(iv) Show the reaction of NH_4Cl and KNH_2 in liquid ammonia. What they are known as?

(v) Write down the chemical formula for the following compound-
a) Ethanal b) cyclohexanone

Q. 4 Write correct option in your answer sheet for following 15 multiple choice questions. **(15)**

MCQ 1 The ketone and aldehyde comes under the functional group-
(A) alcohol (B) Carbonyl compounds
(C) acid (D) Esters and ethers

MCQ 2 The carbon oxygen bond in carbonyl compounds are-
(A) Non polar (B) polar
(C) Neutral in nature (D) Easily dissociable

MCQ 3 In carbonyl compounds the carbon has hybridization of-
(A) sp (B) sp^2
(C) sp^3 (D) ~~dsp^2~~

MCQ 4 The IUPAC nomenclature for Aldehydes are-
(A) Alkanol (B) Alkanyes

(C) Alkanenes (D) Alkanals

MCQ 5 Which property is directly related to dielectric constant-

(A) Viscosity (B) Surface tension

(C) Electrostatic attraction (D) Solubility

MCQ 6 How many moles of liquid ammonia on reaction with RX gives formation of primary amine-

(A) 1 (B) 2

(C) 3 (D) 4

MCQ 7 The alkali metals dissociate in liquid ammonia to form alkali metal cation and-

(A) Alkali electron (B) Ammoniated electron

(C) Blue electron (D) e^- species

MCQ 8 The dielectric constant of liquid ammonia is smaller than that of water-

(A) True (B) False

MCQ 9 Which of the following is an amphoteric solvent-

(A) pyridine (B) Acetic acid

(C) water (D) hydrazine

MCQ 10 The dielectric constant value of water is-

(A) 22.0 (B) 42.0

(C) 68.5 (D) 78.5

MCQ 11 Fe(Iron) catalyst operates over a considerably wider temperature range.

(A) True (B) false

MCQ 12 Which one is act as a catalyst for following reaction?

$2MnO_4^- + 16H^+ + 5C_2O_4^{-2} \rightarrow 2Mn^{+2} + 8H_20 + 10CO_2$

(A) Mn^{+2} (B) Mn^{-7}

(C) Mn^{+3} (D) H_20

MCQ 13 Retarder is

(A) When a catalyst reduces the rate of the reaction (B) When a foreign substance reduces the activity of the catalyst

(C) It is used to slow down a desire reaction (D) A & C both

MCQ 14 Find the incorrect statement/s for catalyst :

(A) Decreases the reactivity (B) Decreases the activation energy

(C) Decreases the productivity (D) A & B both

MCQ 15 Elements which are good catalysts and have ability to change their oxidation number are

(A) Transition elements (B) Nobel gases

(C) Alkali metal (D) All of them

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