Chemistry CT-3 Paper

Chemistry (SRM Institute of Science and Technology)

SRM

DEPARTMENT OF CHEMISTRY
College of Engineering and Technology
SRM Institute of Science and Technology
Kattankulathur – 603203

Set-I

INTERNAL ASSESSMENT – III [CLA1-T3]

RA2311053010132

Program: B.Tech
Course Code & Title: 21CYB101J & Chemistry
Year & Sem: I Year & I Sem

Date: 28/11/2023
Time: 12:30 – 1:30 PM
Max. Marks: 30 marks

Part – A (10 x 1 = 10 Marks)

Answer all the questions

1 In most of the world, acetaminophen is best known as which of the following?
   a) Paracetamol
   b) Methamphetamine
   c) Asprin
   d) Naproxen

2. Identify the polymer formed by addition polymerization
   a) Nylon
   b) Polyester
   c) Teflon
   d) Bakelite

3 The synthesis of which of the following polymers involves the repeated loss of small molecules?
   a) Polythene
   b) Buna-S
   c) Buna-N
   d) Nylon-6,6

4 _____undergoes permanent deformation on heating.
   a) Polythene
   b) PVC
   c) Teflon
   d) Bakelite

5 Arrange the following in the decreasing order of leaving group in nucleophilic substitution reaction.
   a) $H^- > Cl^- > HO^- > Br^- > CH_3COO^-$
   b) $Cl^- > Br^- > HO^- > H^- > CH_3COO^-$
   c) $Cl^- > Br^- > CH_3COO^- > HO^- > H^-$
   d) $HO^- > CH_3COO^- > H^- > Br^- > Cl^-$

6 Minimum interplanar spacing required for Bragg's diffraction is
   a) $\lambda/4$ b) $\lambda/2$
   c) 4λ d) 2λ

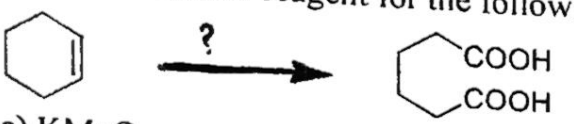
7 Select the incorrect statement from the following option.
   a) Thermosets have 3-dimensional, cross-linked network structure

b) Thermosets cannot be remoulded, reused or reclaimed
c) Thermosets are hard, strong and brittle
d) Thermosets are soluble in suitable solvents

8 Which of the following is used for making rechargeable batteries?
a) Nylon
b) Polyester
c) Polyaniline
d) Polyacrylonitrile

9 The dehydration of alcohols is an example of _____
a) E2 reaction
b) S_N2 reaction
c) S_N1 reaction
d) E1 reaction

10 The most suitable reagent for the following transformation is



a) $KMnO_4$
b) $NaBH_4$
c) $K_2Cr_2O_7$
d) $LiAlH_4$

Part – B (2 x 10 = 20 Marks)

11. a. Discuss the addition polymerization process in the synthesis of PVC, Teflon along with the properties and applications. (10 Marks)

(OR)

b. i. Explain polymer tacticity and its types? (6 Marks)
ii. Write a short note on Dieckmann condensation. (4 Marks)

12. a. i. Explain Bragg's law with a neat diagram. (6 Marks)
ii. For the intercepts x, y, and, z with values of 3, 1, and 2 respectively, find the Miller indices. (4 Marks)

(OR)

b. i Explain in detail the conformational analysis of n-butane with potential energy diagram. (5 Marks)
ii. Explain briefly the E1 and E2 reactions with an example for each. (5 Marks)