

Student Roll Number P-301

Sample Roll Number

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BN-XIIXVII-J
CHEMISTRY (PART-II)
SECTION-A

Time : 20 Minute
Marks : 18

0	0	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9

●	0	0	0	0	0
1	1	1	1	1	1
2	●	2	2	●	2
3	3	3	3	3	3
4	4	●	4	4	4
5	5	5	5	5	●
6	6	6	6	6	6
7	7	7	●	7	7
8	8	8	8	8	8
9	9	9	9	9	9

Sign of Supdt:

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Q.No.1: You have four choices for each objective type question as (A), (B), (C) and (D). The choice which you think is correct fill that circle in front of the question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question.

- i. The compound with highest boiling point is:
 (A) Acetic acid (B) Ethyl alcohol (C) Water (D) Ether ● ~~X~~ (C) (D)
- ii. Which of the following is also produced, when ammonium acetate is heated to produce acetamide.
 (A) NH₃ (B) CO₂ (C) H₂O (D) NH₂ (A) (B) ● (D)
- iii. If Cl₂ is used in excess in the free radical chlorination reaction of methane, major product is:
 (A) CH₃Cl (B) CH₂Cl₂ (C) CHCl₃ (D) CCl₄ (A) (B) (C) ●
- iv. The clemmensen reduction of acetone gives.
 (A) Ethane (B) Propane (C) Methanol (D) Ethanol (A) ● (C) (D)
- v. Geometry of SiO₂ is:
 (A) Trigonal (B) Tetrahedral (C) Pyramidal (D) Angular (A) ● (C) (D)
- vi. Variable oxidation state cannot be shown (d-subshell is complete)
 (A) Zn (B) Cu (C) Mn (D) Ni ● (B) (C) (D)
- vii. The oxide of Chromium which is amphoteric in nature has oxidation state of:
 (A) +2 (B) +3 (C) +4 (D) +6 (A) ● (C) (D)
- viii. Which compound is base for corrosion resistance paints.
 (A) White lead (B) Red lead (C) Lead chromate (D) All of these (A) (B) ● (D)
- ix. Tertiary alcohols are obtained by treating Grignard reagent with:
 (A) Aldehyde (B) Water (C) Ketone (D) Amine (A) (B) ● (D)
- x. Which of these polymers is an addition polymer.
 (A) Nylon (B) Epoxy resins (C) PVC (D) Terylene (A) (B) ● (D)
- xi. Ethers react with cold concentrated HCl to form:
 (A) Alkoxide ion (B) Zwitter ion (C) Oxonium ion (D) Oxoanion (A) (B) ● (D)
- xii. The overall structure of ethane is:
 (A) Tetrahedral (B) Planar (C) Pyramidal (D) None of them ● (B) (C) (D)
- xiii. Most abundant carbohydrate in nature is:
 (A) Cellulose (B) Pectin (C) Chitin (D) Glycogen ● (B) (C) (D)
- xiv. Major gas contributing to green house effect is:
 (A) CFC's (B) CO₂ (C) SO₂ (D) NO_x (A) ● (C) (D)
- xv. Which one of the following is unstable and more reactive?
 (A) Cyclopropane (B) Cyclopentane (C) Cyclohexane (D) Propane ● (B) (C) (D)
- xvi. Oiguard's reagent react with CO₂ to give.
 (A) Alcohol (B) Aldehyde (C) Ketone (D) Carboxylic acid (A) (B) (C) ●
- xvii. General formula of Carboxylic acid is:
 (A) C_nH_nO (B) C_nH_{2n}O₂ (C) C_nH_{2n}O₂ (D) C_nH_{2n}O (A) ● (C) (D)
- xviii. Alkali metal carbonates decompose on heating.
 (A) Li₂CO₃ (B) Na₂CO₃ (C) K₂CO₃ (D) All of them ● (B) (C) (D)

Note: Attempt section B & C accordingly.

SECTION - B

Marks: 40

Q.No 2. Attempt any (TEN) parts of the following. All parts carry equal marks.

- Cyclopropane is more reactive than propane. Explain why?
- Explain the reaction of ethyl acetate with Grignard reagent.
- Write short note on the importance of Calcium.
- Write the reaction of alcohol with SOCl_2 and PX_3 .
- Explain the amphoteric nature of Al_2O_3 and $\text{Be}(\text{OH})_2$.
- Discuss classification of organic compound on the basis of structure.
- How can you prepare Grignard reagent.
- Give the reaction of normal oxides, peroxide and super oxide of alkali metals with water & dil. HCl.
- Discuss isomerism in organic compounds.
- Describe the role of enzyme in digestion of fats.
- Differentiate between Homolytic and Heterolytic fission.
- What are the different fractions obtained by the destruction distillation of coal?
- Discuss the chemical reactions of diethyl ether.

SECTION - C

Marks: 27

Note: Attempt any (THREE) of the following. All questions carry equal marks.

Q.No:3 a). Write down the main function of IR, UV visible and NMR spectroscopy.

b). Discuss structure and acidity of carboxylic acid.

Q.No:4 a). Discuss the reaction of aldehyde with

(i) Alkyl amines (ii) Hydroxylamine (iii) Hydrocyanic acid (iv) ROH

b). Write note on Oxidation of aldehydes and ketones by Tollen's & Fehlin reagent.

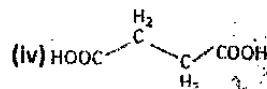
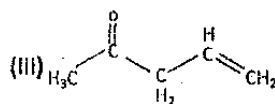
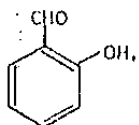
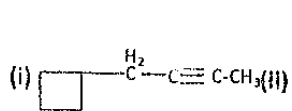
Q.No:5 a). Write short note on any two of following:

- Green house effect
- Chemistry of stratosphere
- Rancidification

Q.No:6. a). Write the structural formulae for each of the following:

- (i) 2,2-Dibromohexanal (ii) Cyclohexadienyl cation (iii) Peroxy acetyl nitrate (iv) Ethanoic anhydride

b). Name the following compounds according to IUPAC system.



(v) $[\text{Co}(\text{en})_2\text{Cl}_2]$