

Time allowed: 3 Hrs

Chemistry (Part – II)
Fresh / Reappear

Flc. No.....

Code-B

Marks: 85

Note: There are three sections of the paper, A, B & C. Attempt Section – A on the same paper and return it to the Superintendent within the given time. Mobile phone etc. are not allowed in the examination hall.

Time: 20 Mins

Section "A"

Marks: 18

Q.1 Write the correct option i.e. A, B, C or D in the empty box provided opposite to each part. No marks will be awarded for cutting, erasing or over writing.

- i. An organic compound having molecular formula C_2H_6O is gas at room temperature. The most appropriate structure is D
 - A. $H_3C-\overset{\overset{O}{\parallel}}{C}-H$
 - B. CH_3-O-CH_3
 - C. CH_3CH_2-OH
 - D. Both B & C
- ii. The major gas contributing 50% to green house effect is D
 - A. CFC's
 - B. NO_x
 - C. CH_4
 - D. CO_2
- iii. Solubility of $Mg(OH)_2$ is enhanced tremendously by the addition of C
 - A. NH_4OH
 - B. $MgCl_2$
 - C. NH_4Cl
 - D. All of these
- iv. Super oxides of alkali metals react with water and form their respective hydroxides, H_2O_2 and A
 - A. O_2
 - B. Normal Oxide
 - C. Peroxide
 - D. None of these
- v. oxidation state is more common at the end of the first transition series. A
 - A. +2
 - B. +3
 - C. +4
 - D. +5
- vi. is more acidic complex ion D
 - A. $[Cu(H_2O)_6]^{+2}$
 - B. $[Fe(H_2O)_6]^{+2}$
 - C. $[Cu(H_2O)_6]^{+1}$
 - D. $[Fe(H_2O)_6]^{+3}$
- vii. is more stable alkene. D
 - A. 1-butene
 - B. cis-2-butene
 - C. trans-2-butene
 - D. Isobutylene
- viii. is heterocyclic organic compound. D
 - A. Cyclopropane
 - B. Toluene
 - C. Aniline
 - D. Thiophene
- ix. $HC \equiv CH + H_2O \xrightarrow[H_2SO_4 / 80^\circ C]{HgSO_4}$ C
 - A. 1,1-ethanediol
 - B. Acetone
 - C. Acetaldehyde
 - D. Ethanol
- x. The correct order of reactivity of different alkyl halides is C
 - A. $-C-F > -C-Cl > -C-Br$
 - B. $-C-F < -C-Cl < -C-Br < -C-I$
 - C. $-C-F < -C-Cl < -C-Br < -C-I$
 - D. $-C-F < -C-Cl < -C-Br > -C-I$
- xi. For the same alkyl or Aryl groups, the ease of formulation of $RMgX$, follows the order for halogens as C
 - A. $F > Cl > Br > I$
 - B. $F = Cl < Br < I$
 - C. $I > Br > Cl > F$
 - D. $I > Br = Cl = F$
- xii. The correct order for the acidity of different Alcohol is C
 - A. $R_3COH > R_2CHOH > RCHOH$
 - B. $R_3COH = R_2CHOH > RCHOH$
 - C. $R_3COH < R_2CHOH < RCHOH$
 - D. $R_3COH < R_2CHOH = RCHOH$
- xiii. Primary amines react with aldehyde and ketones to form addition unusable product, which loses water to form D
 - A. Hydrazine
 - B. Amide
 - C. Nitrile
 - D. Imines
- xiv. is the acid with highest P_{ka} value. B
 - A. Acetic acid
 - B. Methanoic acid
 - C. Chloroacetic Acid
 - D. Trichloro acetic acid
- xv. Decarboxylation of propanoic acid is carried out by heating the acid with soda lime. The product formed is B
 - A. Propane
 - B. Ethane
 - C. Ethanol
 - D. Ethanal
- xvi. is not a hydrolysable sugar. A
 - A. Fructose
 - B. Maltose
 - C. Sucrose
 - D. Starch
- xvii. Nylon (6, 6) is a type of polymers. B
 - A. Addition
 - B. Condensation
 - C. Both A & B
 - D. None of these
- xviii. Ozone (O_3) concentration is increasing at altitude 5 – 7 km. The O_3 is at this level. A
 - A. Pollutant
 - B. Absorb U.V light
 - C. Useful
 - D. Both B & C

Section "B"

Marks: 40

Q.2 Attempt any TEN parts. All parts carry equal marks.

- How lithium Nitrates and carbonates behave differently than nitrates and carbonates of other alkali metals when heated?
- Write possible shapes of complex ions have coordination number 4 with examples.
- Write steps for the conversion of coal into hydrocarbon.
- 2-Bromopropane is the major product when propane is treated with HBr. Justify the statement.
- How 1-Alkyne can be distinguished from non terminal alkyne?
- How primary and secondary Alcohol can be synthesized from Aldehyde?
- How Ethers can be synthesized from alcohol.
- Why Ketones are less reactive than aldehydes towards nucleophiles?
- How Acetic Acid can be prepared from (i) Grignard's reagent. (ii) Nitriles
- Discuss the effect of temperature upon enzyme activity.
- How nail polish remover removes the nail polish?
- How catalytic converter reduces the emission of Hydrocarbons, CO and NO in the exhaust gases of automobiles?
- How modern methods of analysis are superior to classical methods?

Section "C"

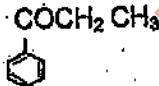
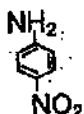
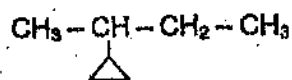
Marks: 20

Note: Attempt any THREE questions. All questions carry equal marks.

Q.3 a. Compare structure of Carbon dioxide and silicon dioxide.

b. Write reaction of Hexaaqua Iron (II) Hexaaqua iron (III) with water and Ammonia.

Q.4 a. Write IUPAC name for following compounds.

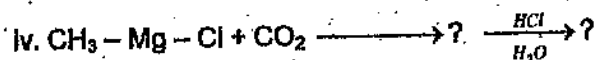
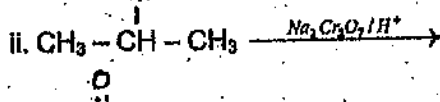
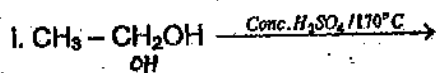


b. How alkane can be synthesized from

(i) carbonyl compounds (ii) sodium salt of Carboxylic acid

Q.5 a. Explain the directive and activating effect in monosubstituted Bromobenzene.

b. Complete the reaction.



Q.6 a. What are lipids? Write down at least three chemical properties of lipids.

b. Define the following terms.

(i) Stretching vibration (ii) Bending vibration (iii) Shielded and deshielded proton in NMR.