Roll No. : _____

Objective Paper Code **8488**

Intermediate Part Second **F30-42-21**

CHEMISTRY (Objective) GROUP - II

Time: 20 Minutes Marks: 17

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 the relevant circle in front of that question number on computerized answer sheet. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero marks in that question. Attempt as many questions as given in objective type question paper and leave other circles blank.**

S.#	Questions	A	B	C	D
1	Preparation of vegetable ghee involves:	Halogenation	Hydrogenation	Hydroxylation	Dehydroge-nation
2	Which is meta-directing group?	– OH	$-NH_2$	$-NO_2$	– Cℓ
3	For which mechanism, first step involved is same?	E_1 and E_2	E_2 and SN_2	E_1 and SN_1	SN_1 and E_2
4	Ethanol can be converted into ethanoic acid by:	Hydrogenation	Oxidation	Hydration	Halogenation
5	The homologous series of both aldehydes and ketones have the general formula:	$C_nH_{2n}O_2$	C_nH_{2n+2}	$C_nH_{2n}O$	C_nH_{2n-2}
6	Formalin is _____ solution of Formaldehyde in water.	10%	20%	40%	60%
7	Alkane nitrile can be converted into carboxylic acids by:	Hydration	Acidic hydrolysis	Hydrogenation	Oxidation
8	Which reagent is used to covert a carboxylic acid to an alcohol?	H_2 / Ni	H_2 / Pt	$NaBH_4$	$LiAlH_4$
9	All the nitrogen fertilizers except _____ make the soil acidic.	Calcium nitrate	Ammonium nitrate	Potassium nitrate	All these
10	Ionization energy of calcium is lower than _____ element.	Strontium	Magnesium	Barium	Sodium
11	Which compound is added in Down's cell to lower the melting point of sodium chloride?	$CaSO_4$	$CaCℓ_2$	$Ca(NO_3)_2$	Na_2CO_3
12	Boric acid cannot be used:	As antiseptic in medicine	For washing eyes	In soda bottles	For enamels and glazing
13	Nitric acid does not react with all metals given, except:	Gold	Platinum	Magnesium	Iridium
14	Chlorine heptoxide ($Cℓ_2O_7$) reacts with water to form:	Hypochlorous acid	Chloric acid	Perchloric acid	Chlorine and oxygen
15	C^- cannot oxidize:	F^-	Br^-	I^-	Na-metal
16	The colour of $[Ti(H_2O)_6]^{3+}$ ion is:	Red	Yellow	Violet	Green
17	Fredrick Wholer synthesized urea by heating:	$NH_4Cℓ$	$(NH_4)_2CO_3$	NH_4CNO	NH_3

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Intermediate Part Second

Roll No. _____

CHEMISTRY (Subjective) GROUP - II

Time: 02:40 Hours Marks: 68 FBD-42-21

SECTION – I

2. **Write short answers to any EIGHT parts.** 16

(i) The oxidation states vary in a period but remain almost constant in a group. Why?

(ii) The hydration energies of the ions are in the following order $A\ell^{3+} > Mg^{2+} > Na^{+}$. Justify.

(iii) Write the names and chemical formulas of important minerals of sodium.

(iv) What happens when (a) Lithium carbonate is heated (b) Lithium hydroxide is heated to red hot?

(v) How borax can be converted into orthoboric acid?

(vi) Why nitric acid is frequently transported in Aluminium containers?

(vii) Write the names and chemical formulas of four important boric acids.

(viii) How does nitrogen differ from other elements of its group?

(ix) Write the equation for the reaction between conc $\cdot H_2SO_4$ and copper and explain what type of reaction is it?

(x) Why nitrogen is necessary for plants? Give names of two nitrogen fertilizers.

(xi) ~~What do you mean by setting of cement?~~

(xii) Write any four points of essential qualities of a good fertilizer.

3. **Write short answers to any EIGHT parts.** 16

(i) Give reactions of bleaching powder with ammonia and carbon dioxide.

(ii) Write reaction for the preparation of bleaching powder and names of the methods used to prepare it.

(iii) Write names of these compounds. (a) $NaC\ell O_3$ (b) HIO_3

(iv) Why does damaged tin plated iron get rusted quickly?

(v) What are substitutional alloys? Give examples.

(vi) What arguments were given by Kekule to confirm the regular hexagonal structure for benzene?

(vii) How would you prepare benzene from acetylene and toluene from n-heptane?

(viii) What is Benedict's solution test?

(ix) Write the names of those weak oxidizing agents, which can oxidize aldehydes but not the ketones?

(x) Write molecular formulas of palmitic acid and stearic acid.

(xi) How would you prepare acetic acid from ethanol and a suitable alkane nitrile?

(xii) Give two reactions of carboxylic acids in which OH group of the acids are involved.

4. **Write short answers to any SIX parts.** 12

(i) Define functional group. Give any two examples.

(ii) What is tautomerism? Give example.

(iii) What is hydrogenolysis? Give example.

(iv) Convert CH_4 into formaldehyde by catalytic oxidation.

(v) What is mustard gas? How it is prepared?

(vi) Define nucleophile and electrophile.

(vii) ~~Complete the reactions: (a) $C_2H_5Br + NH_3 \rightarrow$ (b) $C_2H_5Br + CH_3COONa \rightarrow$~~

(viii) Write the structural formulae of lactic acid and tartaric acid.

(ix) Distinguish between methanol and ethanol by one test.

SECTION – II Attempt any THREE questions. Each question carries 08 marks.

5. (a) Write similarities and differences of hydrogen with IV-A group elements. 04

(b) Describe diaphragm cell method for preparation of NaOH. 04

6. (a) Write equations for the reactions of conc $\cdot HNO_3$ with: (i) Zn (ii) Cu (iii) Sn (iv) HI 04

(b) Describe electrochemical theory to explain corrosion. 04

7. (a) Describe atomic orbital hybridization. Explain sp^2-hybridizaton. 04

(b) What is aldol condensation reaction? Give an example and mechanism. 04

8. (a) Explain Markownikov's rule with mechanism and two examples. 04

(b) Explain S_N2 reactions with example and characteristics. 04

9. (a) How straight chain structures for the benzene is ruled out. 04

(b) Give the preparation of methyl alcohol on large scale. How it may be distinguished from ethyl alcohol. 04

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