FSD-1-24

Roll No. : _____

Objective
Paper Code
8485

Intermediate Part Second

CHEMISTRY (Objective) GROUP - I

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	Which acid can be used as a catalyst in Friedel-Crafts reactions?	HNO_3	$BeC\ell_2$	$A\ell C\ell_3$	H_2SO_4
2	The presence of a double bond in a compound is the sign of:	Saturation	Unsaturation	Substitution	Elimination
3	Which set of hybrid orbitals has planar triangular shape:	sp^2	sp^3	sp	dsp^2
4	The colour of transition metal complexes is due to:	Paramagnetic nature of element	Ionization	Loss of S-electron	d-d transition of electrons
5	Bleaching powder may be produced by passing chlorine over:	Calcium carbonate	Hydrated calcium sulphate	Calcium hydroxide	Magnesium hydroxide
6	Nitric oxide forms a brown coloured addition compound with $FeSO_4$. This test is used to confirm the presence of:	Carbonates	Phosphates	Nitrates	Sulphates
7	Which element forms an ion with charge +3?	Beryllium	Aluminum	Carbon	Silicon
8	Which ion will have the maximum value of heat of hydration?	Na^+	Cs^{+1}	Ba^{+2}	Mg^{+2}
9	Sodium reacts with excess of oxygen and forms:	Sub oxide	Normal oxide	Peroxide	Super oxide
10	The pH range of the acid rain is:	7 – 6.5	6.5 – 6	6 – 5.6	Less than 5
11	In purification of potable water the coagulant used is:	Nickel sulphate	Copper sulphate	Barium sulphate	Alum
12	Phosphorous helps in the growth of:	Root	Leaves	Stem	Seed
13	Which polymer is an addition polymer?	Nylon-6,6	Polystyrene	Terylene	Epoxy resin
14	Which acid is used in the manufacturing of synthetic fiber?	Formic acid	Oxalic acid	Carbonic acid	Acetic acid
15	Which will have the highest boiling point?	Mathanal	Ethanal	Propanal	2-Hexanone
16	Which compound shows hydrogen bonding?	C_2H_5OH	C_2H_4	$C_2H_5C\ell$	CH_3-O-CH_3
17	For which mechanism, the first step involved is the same:	E1 and E2	E2 and S_N2	S_N1 and E2	E1 and S_N1

Intermediate Part Second Roll No. _____

CHEMISTRY (Subjective) GROUP - I

Time: 02:40 Hours Marks: 68 FSD-1-24

SECTION – I

2. **Write short answers to any EIGHT parts.** 16
   (i) Give two chemical reactions of ZnO which prove its amphoteric character.
   (ii) Alkali metals give ionic hydrides. Give justification for the statement.
   (iii) What happens when gypsum is strongly heated?
   (iv) What is lime mortar?
   (v) Why do K_2CrO_4 and $K_2Cr_2O_7$ show similar properties in aqueous solution?
   (vi) Transition elements show variable oxidation state. Give reason.
   (vii) What is β-elimination reaction? Give one example.
   (viii) How would you prepare n-butane and ethane from ethyl chloride?
   (ix) What is thermoplastic polymer? Give two examples.
   (x) What is denaturation of proteins? Give one example.
   (xi) Mention two points of difference between DNA and RNA.
   (xii) What is requirement for a compound to be used as a fertilizer?

3. **Write short answers to any EIGHT parts.** 16
   (i) Define the "Ring Test" for the confirmation of the presence of nitrate ions in the solution.
   (ii) Why is SO_3 dissolved in H_2SO_4 and not in water?
   (iii) Write four uses of bleaching powder.
   (iv) Why HF is weaker acid than HCℓ?
   (v) Define functional group. Give the functional group of ether and carboxylic acid.
   (vi) Define Tauto merism. Give an example.
   (vii) How is ethyne prepared on industrial scale?
   (viii) How is Raney Nickel prepared? Give its one use.
   (ix) Convert ethene into ethyl alcohol.
   (x) How is ozone damaged in stratosphere by chlorofluorocarbons (CFCs)?
   (xi) Differentiate between primary and secondary pollutants.
   (xii) How does acid rain affect environment?

4. **Write short answers to any SIX parts.** 12
   (i) What are silicates? How sodium silicate is prepared?
   (ii) What is boric acid? How it is prepared in laboratory?
   (iii) Why are liquid silicones preferred over ordinary organic lubricants?
   (iv) Why nitration of toluene is faster than benzene?
   (v) How will you distinguish between methanol and ethanol?
   (vi) Describe the term esterification using ethyl alcohol as an example.
   (vii) How will you distinguish between acetone and ethyl alcohol?
   (viii) How would you convert acetic acid into acetamide?
   (ix) What is peptide bond? Write the formula of a dipeptide.

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

5. (a) What are metals? Give their properties with examples. 01,03
   (b) What are two major problems in diaphragm cell? How they are solved? 02,02

6. (a) What is disproportionation reaction? Explain reactions of chlorine with cold and hot NaOH. 01,03
   (b) Describe digestion and pulp washing in neutral sulphite semi-chemical process. 02,02

7. (a) Explain the reforming of petroleum with suitable example. 04
   (b) Differentiate between E_2 and E_1 reactions mechanism. 04

8. (a) How can you prepare the following from ethyne:
   (i) Acetaldehyde (ii) Vinyl acetylene (iii) Glyoxal (iv) Acetonitrile 01,01,01,01
   (b) How ethanal can react with following:
   (i) HCN (ii) $NaHSO_3$ (iii) I_2/NaOH (iv) $NaBH_4$ 01,01,01,01

9. (a) What is resonance and discuss structure of benzene by resonance method? 04
   (b) Explain following terms using ethyl alcohol as an example:
   (i) Esterification (ii) Ether formation (iii) Oxidation (iv) Dehydration 04