

Objective
Paper Code
8485

FSD-1-24
Intermediate Part Second
CHEMISTRY (Objective) GROUP - I
Time: 20 Minutes Marks: 17

Roll No. : _____



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	BeCl ₂	AlCl ₃	H ₂ SO 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 ⁺	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 ₂ H ₅ OH	C ₂ H ₄	C ₂ H ₅ Cl	CH ₃ -O-CH ₃
17	For which mechanism, the first step involved is the same:	E1 and E2	E2 and S _N 2	S _N 1 and E2	E1 and S _N 1



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CHEMISTRY (Subjective) GROUP - I

Time: 02:40 Hours

Marks: 68

FSD-1-24

SECTION – I

2. Write short answers to any EIGHT parts. 16
- Give two chemical reactions of ZnO which prove its amphoteric character.
 - Alkali metals give ionic hydrides. Give justification for the statement.
 - What happens when gypsum is strongly heated?
 - What is lime mortar?
 - Why do K_2CrO_4 and $K_2Cr_2O_7$ show similar properties in aqueous solution?
 - Transition elements show variable oxidation state. Give reason.
 - What is β -elimination reaction? Give one example.
 - How would you prepare n-butane and ethane from ethyl chloride?
 - What is thermoplastic polymer? Give two examples.
 - What is denaturation of proteins? Give one example.
 - Mention two points of difference between DNA and RNA.
 - What is requirement for a compound to be used as a fertilizer?
3. Write short answers to any EIGHT parts. 16
- Define the "Ring Test" for the confirmation of the presence of nitrate ions in the solution.
 - Why is SO_3 dissolved in H_2SO_4 and not in water?
 - Write four uses of bleaching powder.
 - Why HF is weaker acid than HCl?
 - Define functional group. Give the functional group of ether and carboxylic acid.
 - Define Tauto merism. Give an example.
 - How is ethyne prepared on industrial scale?
 - How is Raney Nickel prepared? Give its one use.
 - Convert ethene into ethyl alcohol.
 - How is ozone damaged in stratosphere by chlorofluorocarbons (CFCs)?
 - Differentiate between primary and secondary pollutants.
 - How does acid rain affect environment?
4. Write short answers to any SIX parts. 12
- What are silicates? How sodium silicate is prepared?
 - What is boric acid? How it is prepared in laboratory?
 - Why are liquid silicones preferred over ordinary organic lubricants?
 - Why nitration of toluene is faster than benzene?
 - How will you distinguish between methanol and ethanol?
 - Describe the term esterification using ethyl alcohol as an example.
 - How will you distinguish between acetone and ethyl alcohol?
 - How would you convert acetic acid into acetamide?
 - 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

Roll No. : _____

Objective
Paper Code
8488

Intermediate Part Second
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	The electrophile in aromatic sulphonation is:	H_2SO_4	HSO_4^-	SO_3	SO_3^+
2	When cyanogen chloride ($Cl - CN$) is made to react with ethyl magnesium bromide the product formed is:	$CH_3 - CN$	$CH_3 - CH_2 - CN$	$CH_3 - CH_2 - CH_2 - CN$	$CH_2 = CH - CN$
3	Which compound will have the maximum repulsion with water?	C_6H_6	C_2H_5OH	$CH_3CH_2CH_2 - OH$	$CH_3 - O - CH_3$
4	It will have the highest boiling point:	Mathanal	Ethanal	Propanal	2-Hexanone
5	Which reagent is used to reduce a carboxylic group to an alcohol?	H_2 / Ni	H_2 / Pt	$NaBH_4$	$LiAlH_4$
6	Nitrogenous bases is not present in RNA:	Cytosine	Adenine	Thiamine	Uracil
7	Phosphorus helps the growth of:	Root	Leave	Stem	Seed
8	Methane has a mean residence time in atmosphere about:	3 - 7 years	4 - 7 years	5 - 7 years	6 - 7 years
9	Newspaper can be recycled again and again by how many times?	2	3	4	5
10	Select the two normal elements are present in seventh period:	Rb, Sr	Cs, Ba	Fr, Ra	La, Hf
11	It does not belong to alkaline earth metals:	Be	Ra	Ba	Rn
12	The chief ore of aluminum is:	Na_3AlF_6	$Al_2O_3 \cdot 2H_2O$	Al_2O_3	$Al_2O_3 \cdot H_2O$
13	Birkeland-Eyde process used for the preparation of:	HNO_3	H_2SO_4	C_6H_6	HCHO
14	The anhydride of $HClO_4$ is:	ClO_3	ClO_2	Cl_2O_5	Cl_2O_7
15	It is a typical transition metal:	Sc	Y	Co	Ra
16	Linear shape is associated with which set of hybrid orbitals?	sp	sp^2	sp^3	dsp^2
17	Synthetic rubber is made by polymerization of:	Chloroform	Acetylene	Divinyl acetylene	Chloroprene

1214-XII124-5000



CHEMISTRY (Subjective) GROUP - II

Time: 02:40 Hours Marks: 68

SECTION – I

Write short answers to any EIGHT parts.

16

- (i) What is the difference between acidic and basic oxides? Give one example of each.
- (ii) Carbon and hydrogen possess reducing properties. Show with equations.
- (iii) Decomposition of lithium nitrate gives different products than the nitrates of other alkali metals. Why? Give reaction.
- (iv) Give brief description of alkali and alkaline earth metal sulphates solubility in water.
- (v) How is K_2CrO_4 converted into $K_2Cr_2O_7$? Show with reaction.
- (vi) How is chromyl chloride obtained from potassium dichromate? Give reaction.
- (vii) How is ethene prepared by E_2 elimination reaction?
- (viii) Give reaction for the preparation of 1-Butanol from Grignard reagent.
- (ix) What is the difference between isomerases and ligases?
- (x) Give reaction for the formation of soap from triglyceride.
- (xi) Give brief description of the rancidity of fats.
- (xii) Give names of the nitrogenous fertilizers.

3. Write short answers to any EIGHT parts.

16

- (i) How does PCl_5 react with water?
- (ii) Write names and formulas of any two sulphide ores of Sulphur.
- (iii) Give chemical reactions of H_2SO_4 with $NaCl$ and $NaBr$.
- (iv) What is available chlorine?
- (v) Define isomerism. Write two isomers of butane.
- (vi) How was coal formed from wood under the Earth?
- (vii) Write common name and structural formula of 1-methyl propene.
- (viii) What is incomplete oxidation of CH_4 ?
- (ix) Give structural formulae of the compounds: (i) Potassium maleate (ii) Disodium succinate
- (x) How is mustard gas prepared from ethene?
- (xi) What are primary pollutants? Give two examples.
- (xii) What is leachate?

4. Write short answers to any SIX parts.

12

- (i) How is H_3BO_3 prepared from (i) Borax (ii) Colemanite
- (ii) Write four uses of borax.
- (iii) Why are the liquid silicones preferred over the ordinary organic lubricants?
- (iv) How is ethyl benzene prepared by Wurtz-Fitting reaction?
- (v) How are the phenols prepared by Dow's method?
- (vi) Describe the term esterification using ethyl alcohol as an example.
- (vii) Define silver mirror test. Give the reaction involved.
- (viii) How is acetic acid converted into (i) Methane (ii) Acetic anhydride
- (ix) What is Zwitter ion? Give its structural formula.

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

5. (a) Discuss position of hydrogen at the top of IA group. Give similarities and dissimilarities. 04
(b) Describe the manufacture of NaOH by diaphragm cell. 04
6. (a) What are disproportionation reaction? How does NaOH react with Cl_2 in hot and cold state? 01,03
(b) What is meant by setting of cement? Explain the reaction taking place in first 24 hours of setting of cement. 01,03
7. (a) Write notes on: (i) Catalytic cracking (ii) Steam cracking 02,02
(b) What do you understand by the term β -elimination reaction? Explain E-1 mechanism in detail. 01,03
8. (a) How will you synthesize the following compounds starting from ethyne?
(i) Acrylonitrile (ii) Acetaldehyde (iii) Glyoxal (iv) Methyl nitrile 04
(b) What is Cannizzaro's reaction? Describe its mechanism and prepare methanol and formic acid by this reaction. 04
9. (a) Discuss atomic orbital treatment of benzene in detail. 04
(b) Describe two reactions of each in which C-O and O-H bonds of alcohol are broken. 02,02

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