

CHEMISTRY — OBJECTIVE

Intermediate Part-II · 1st Annual 2024 — Group: II

Time: 20 Minutes	OBJECTIVE	Marks: 17
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NOTE: 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.

QUESTION NO. 1

1	The electrophile in aromatic sulphonation is: (A) H_2SO_4 (B) HSO_4^- (C) SO_3 (D) SO_3^+
2	When cyanogen chloride ($\text{Cl} - \text{CN}$) is made to react with ethyl magnesium bromide the product formed is: (A) $\text{CH}_3 - \text{CN}$ (B) $\text{CH}_3 - \text{CH}_2 - \text{CN}$ (C) $\text{CH}_3 - \text{CH}_2 - \text{CH}_2 - \text{CN}$ (D) $\text{CH}_2 = \text{CH} - \text{CN}$
3	Which compound will have the maximum repulsion with water? (A) C_6H_6 (B) $\text{C}_2\text{H}_5\text{OH}$ (C) $\text{CH}_3\text{CH}_2\text{CH}_2 - \text{OH}$ (D) $\text{CH}_3 - \text{O} - \text{CH}_3$
4	It will have the highest boiling point: (A) Methanal (B) Ethanal (C) Propanal (D) 2-Hexanone
5	Which reagent is used to reduce a carboxylic group to an alcohol? (A) H_2 / Ni (B) H_2 / Pt (C) NaBH_4 (D) LiAlH_4
6	Nitrogenous bases is not present in RNA: (A) Cytosine (B) Adenine (C) Thiamine (D) Uracil
7	Phosphorus helps the growth of: (A) Root (B) Leave (C) Stem (D) Seed
8	Methane has a mean residence time in atmosphere about: (A) 3 – 7 years (B) 4 – 7 years (C) 5 – 7 years (D) 6 – 7 years
9	Newspaper can be recycled again and again by how many times? (A) 2 (B) 3 (C) 4 (D) 5
10	Select the two normal elements are present in seventh period: (A) Rb , Sr (B) Cs , Ba (C) Fr , Ra (D) La , Hf
11	It does not belong to alkaline earth metals: (A) Be (B) Ra (C) Ba (D) Rn
12	The chief ore of aluminum is: (A) Na_3AlF_6 (B) $\text{Al}_2\text{O}_3 \cdot 2\text{H}_2\text{O}$ (C) Al_2O_3 (D) $\text{Al}_2\text{O}_3 \cdot \text{H}_2\text{O}$
13	Birkeland-Eyde process used for the preparation of: (A) HNO_3 (B) H_2SO_4 (C) C_6H_6 (D) HCHO
14	The anhydride of HClO_4 is: (A) ClO_3 (B) ClO_2 (C) Cl_2O_5 (D) Cl_2O_7
15	It is a typical transition metal: (A) Sc (B) Y (C) Co (D) Ra
16	Linear shape is associated with which set of hybrid orbitals? (A) sp (B) sp^2 (C) sp^3 (D) dsp^2
17	Synthetic rubber is made by polymerization of: (A) Chloroform (B) Acetylene (C) Divinyl acetylene (D) Chloroprene

CHEMISTRY — SUBJECTIVE

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Time: 02:40 Hours	SUBJECTIVE	Marks: 68
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SECTION - I**QUESTION NO. 2 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 nitrogeous fertilizers.

QUESTION NO. 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?

QUESTION NO. 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

Notes on this transcription: This paper has no Urdu column; it is English throughout. • The subjective Q2 question number is cut off at the left edge of the scan; shown as 2, following Q3 and Q4 and the 16+16+12 part marks. • Board spellings and grammar are kept as printed ("Mathanal", "Nitrogeous bases is not present", "Thiamine", "What are disproportionation reaction?", "Wurtz-Fitting"). • Typeset by Tayarri from the original board paper; no answer key included.