

FBD-12-1-23

Intermediate Part Second - 136

Roll No. : \_\_\_\_\_

Objective  
Paper Code

## CHEMISTRY (Objective) GROUP - I

8483

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 main water pollutant chromium-VI is discharged by:	Plastic industry	Paper industry	Leather industry	Cement industry
2	Urea contains:	36% nitrogen	46% nitrogen	56% nitrogen	66% nitrogen
3	Polyamide resins are:	Homopolymer	Copolymer	Terpolymer	Addition polymer
4	Compounds having $-C \equiv N$ group are called:	Nitro compound	Amino acid	Alkane nitriles	Amide
5	During reduction of aldehyde with $\text{NaBH}_4$ , $\text{H}^-$ ion act as:	Electrophile	Nucleophile	Acid	Base
6	Which enzyme is not involved in fermentation of starch?	Diastase	Zymase	Urease	Maltase
7	Carbolic acid has another name of:	Alcohol	Phenol	Ether	Carboxylic acid
8	Which is not a nucleophile?	$\text{H}_2\text{O}$	$\text{H}_2\text{S}$	$\text{BF}_3$	$\text{NH}_3$
9	The electrophile in aromatic sulphonation is:	$\text{H}_2\text{SO}_4$	$\text{HSO}_4^-$	$\text{SO}_3$	$\text{SO}_3^+$
10	$\beta$ - $\beta'$ -dichloroethyl sulphide is known as:	Mustard gas	Laughing gas	Phosgene gas	Bio gas
11	A double bond consists of:	Two sigma bonds	One sigma and one pi bond	One sigma and two pi bond	Two pi bond
12	The colour of transition metal complexes is due to:	d-d transition of electrons	Ionization	Loss of s-electron	Gain of s-electron
13	Bleaching powder is prepared by passing chlorine over:	Calcium carbonate	Calcium sulphate	Calcium hydroxide	Magnesium hydroxide
14	Catalyst used in contact process is:	$\text{Fe}_2\text{O}_3$	$\text{V}_2\text{O}_5$	$\text{SO}_3$	$\text{Ag}_2\text{O}$
15	The chief ore of aluminum is:	$\text{Na}_3\text{AlF}_6$	$\text{Al}_2\text{O}_3 \cdot 2\text{H}_2\text{O}$	$\text{Al}_2\text{O}_3$	$\text{Al}_2\text{O}_3 \cdot \text{H}_2\text{O}$
16	The mineral $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ has the general name:	Gypsum	Dolomite	Calcite	Epsom salt
17	Melting point of halogens:	Decrease down the group	Increase down the group	Remains same in group	First increase and then down the group

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**CHEMISTRY (Subjective) GROUP - I**

FBD-12-1-23

Time: 02:40 Hours

Marks: 68

**SECTION - I**

16

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

- How will you convert boric acid into borax and vice versa?
- Write the chemical formula of these minerals: (a) borax (b) Colemanite
- What are the common properties of group IVA elements? (any four)
- What is Wurtz-fitting reaction?
- How is glyoxal produced from benzene?
- Define aromatic compounds with two examples.
- What is condensation polymerization?
- How can you differentiate between glucose and fructose?
- Write any four uses of lipids?
- What is dissolved oxygen?
- How do  $\text{CO}_2$  and  $\text{SO}_2$  cause acid rain?
- How do pesticides affect living organism?

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

- Write the functional group of alkanone and alkanonic acid with one example in each case.
- What do you know about functional group isomerism? Give one example.
- Give structural formula of alkene expected to be formed by dehydrohalogenation of 1-chloropentane.
- Starting from ethene prepare ethyne.
- How is acetylene converted into chloroprene?
- How does Grignard reagent react with methanal?
- Starting from ethyl chloride prepare (a) n-butane (b) ethane.
- Write the names of woody raw materials of paper industry.
- What are the four essential qualities of a good fertilizer?
- Write the allotropic forms of phosphorus.
- Write reaction taking place in contact tower for the manufacturing sulphuric acid.
- Write the ring test for the confirmation of nitrate ion in solution.

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

- What are ligands? Give one example.
- Draw the geometry of  $\text{PCl}_5$ .
- What is chromyl chloride test?
- Define fermentation. Give one example.
- What is Lucas Test?
- Why phenol is acidic but alcohol is not?
- Give mechanism of addition of  $\text{NH}_3$  with acetone.
- What is iodoform test? Give its use.
- What are amino acids? Give their general formula.

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

- (a) Discuss the position of hydrogen with group I-A elements. 04  
(b) Write a detailed note on the commercial preparation of sodium by Down's cell. 04
- (a) Write eight applications of noble gases. 04  
(b) Describe the process of digestion in paper industry. 04
- (a) Explain any four features of organic compounds. 04  
(b) Explain the structure of benzene on the basis of molecular orbital treatment. 04
- (a) Convert: (i) Ethyne into oxalic acid (ii) Propyne into acetone 02,02  
(b) What are alkyl halides? How alkyl halides are prepared from alcohol by three different reactions. 01,03
- (a) How does acetaldehyde react with the following reagents? 01,01,01,01  
(i)  $\text{C}_2\text{H}_5\text{MgI}$  (ii)  $\text{HCN}$  (iii)  $\text{NaHSO}_3$  (iv) dil  $\text{NaOH}$   
(b) Discuss two methods of preparation of  $\alpha$ -amino acids. 04

FBD-12-2-23

Roll No. : \_\_\_\_\_

Objective  
Paper Code  
**8486**Intermediate Part Second - 301  
**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.coa

S.#	Questions	A	B	C	D
1	Formula of chloroform is:	CH <sub>3</sub> Cl	CCl <sub>4</sub>	CH <sub>2</sub> Cl <sub>2</sub>	CHCl <sub>3</sub>
2	Linear shape is associated with which set of hybrid orbitals?	sp	sp <sup>2</sup>	sp <sup>3</sup>	dsp <sup>2</sup>
3	Group VI-B of transition elements contains:	Zn, Cd, Hg	Fe, Ru, Os	Cr, Mo, W	Mn, Te, Re
4	Which one of these hydrogen halides is the weakest acid in solution?	HF	HBr	HI	HCl
5	One of the catalyst used in contact process:	Fe <sub>2</sub> O <sub>3</sub>	V <sub>2</sub> O <sub>5</sub>	SO <sub>3</sub>	Ag <sub>2</sub> O
6	The chief ore of aluminum is:	Na <sub>3</sub> AlF <sub>6</sub>	Al <sub>2</sub> O <sub>3</sub> · 2H <sub>2</sub> O	Al <sub>2</sub> O <sub>3</sub>	Al <sub>2</sub> O <sub>3</sub> · H <sub>2</sub> O
7	The oxide of beryllium is:	Acidic	Basic	Amphoteric	Composite
8	Keeping in view the size of atoms, which order is the correct one?	Mg > Sr	Ba > Mg	Lu > Ce	Cl > I
9	The normal amount of overhead ozone is about:	350 DU	250 DU	150 DU	50 DU
10	Percentage composition of silica in cement is:	62	22	7.5	2.5
11	Succinic thiokinase is an example of:	Ligases	Lyases	Hydrolases	Isomerases
12	Flavour of amyl butyrate (Ester) is:	Orange	Apricot	Jasmine	Banana
13	The colour of precipitate of aldehyde with Fehling's solution is:	Black	White	Blue	Brick red
14	Rectified spirit contains ethyl alcohol about:	80%	85%	90%	95%
15	Ethanol can be converted into ethanoic acid by:	Hydrogenation	Hydration	Oxidation	Fermentation
16	Which is not a nucleophile?	H <sub>2</sub> O	H <sub>2</sub> S	BF <sub>3</sub>	NH <sub>3</sub>
17	The electrophile in aromatic sulphonation is:	H <sub>2</sub> SO <sub>4</sub>	HSO <sub>4</sub> <sup>-</sup>	SO <sub>3</sub>	SO <sub>3</sub> <sup>+</sup>

1212-XII132031-5000

## CHEMISTRY ( Subjective ) GROUP - II

F30-12-2-23

Time: 02:40 Hours

Marks: 68

## SECTION - I

2. Write short answers to any **EIGHT** parts. 16
- Why  $\text{CO}_2$  is gas but  $\text{SiO}_2$  is a solid?
  - Write four uses of borax.
  - What is meant by chemical garden?
  - Prepare glyoxal from benzene.
  - Give the structural formulae of (a) Benzoic acid (b) Acetophenone
  - Write objections to Kekule formula of benzene.
  - What are thermoplastic polymers? Give two examples.
  - Give two points of difference between RNA and DNA.
  - How is PVC prepared? Give its uses.
  - What are primary and secondary pollutants?
  - How is water pollution caused by the detergents?
  - What is dissolved oxygen?
3. Write short answers to any **EIGHT** parts. 16
- Explain reforming of petroleum with the help of a suitable example.
  - Define functional group. Give two examples of oxygen containing functional groups.
  - Write structural formulae of these compounds: (a) 2,5-heptadiene (b) 1,3-pentadiene
  - How can you chemically distinguish between propene and propyne?
  - Write the structural formula of the product formed when 1-butene reacts with  $\text{Br}_2$  in  $\text{CCl}_4$ .
  - Give reactions of  $\text{HNO}_3$  with reducing agents (a)  $\text{FeSO}_4$  (b)  $\text{H}_2\text{S}$
  - How does concentrated  $\text{H}_2\text{SO}_4$  react with (a) Copper (b) Ag. Give reactions.
  - How does NO react with  $\text{H}_2\text{S}$  and  $\text{H}_2\text{SO}_3$ ?
  - Write reaction of ethyl magnesium chloride with cyanogen chloride.
  - Give preparation of Grignard reagent in the presence of dry ether.
  - How is potassium nitrate prepared on industrial scale?
  - What products are formed in the pre-heating zone and decomposition zone of rotary kiln in cement industry?
4. Write short answers to any **SIX** parts. 12
- $\text{KMnO}_4$  acts as oxidizing agents. Give reaction.
  - Why does damaged tin plated iron get rusted quickly?
  - Under what conditions does aluminium corrode?
  - Give IUPAC names: (i)  $\begin{array}{c} \text{H}_2\text{C}-\text{CH}_2 \\ | \quad | \\ \text{HO} \quad \text{OH} \end{array}$  (ii)  $\begin{array}{c} \text{OH} \\ | \\ \text{CH}_3-\text{CH}-\text{COOH} \end{array}$
  - Why and how alcohol is denatured?
  - How are ethers prepared by Williamson's synthesis?
  - How will you distinguish between methanal and ethanal by chemical reaction?
  - Give reaction of  $\text{HCHO}$  with  $\text{NaBH}_4$
  - What is ninhydrin test?

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

- (a) What are oxides? Discuss their classification on the basis of acidic and basic character. 01,03  
(b) What is the role of gypsum in industry? 04
- (a) Write any eight applications of noble gases. 04  
(b) What is neutral sulphite semi-chemical process? Explain its bleaching unit. 04
- (a) What is cracking? Discuss its types. 01,03  
(b) Discuss Friedel-Crafts alkylation reaction of benzene with mechanism. 04
- (a) Write any four methods for preparation of alkanes. 04  
(b) Write any four methods for preparation of alkyl halides from alcohols. 04
- (a) Starting from aldehyde prepare: (i) Oxime (ii) Hydrazone (iii) Iodoform (iv) Cyanohydrin 04  
(b) What types of reactions are shown by carboxylic acids? Describe any three reactions involving hydrogen atom of carboxylic acid group. 04