

**INTERMEDIATE PART-II (12<sup>th</sup> CLASS)****CHEMISTRY PAPER-II (NEW SCHEME) GROUP-I**

TIME ALLOWED: 2.40 Hours

**SUBJECTIVE**

MAXIMUM MARKS: 68

**NOTE: - Write same question number and its part number on answer book, as given in the question paper.**

**SECTION-I**

2. **Attempt any eight parts.** **8 × 2 = 16**
- Why does ionic character of halides decrease from left to right in a period?
  - How does Lanthanide contraction control the atomic sizes of elements of 6<sup>th</sup> and 7<sup>th</sup> periods?
  - Why is Potassium Superoxide used in breathing equipments of mountaineers and in space craft?
  - How is boric acid prepared from colemanite?
  - What is effect of heat on boric acid?
  - What is Asbestos? Give its two uses.
  - Give the reactions of nitric acid with: (a) Arsenic (b) Antimony
  - What is aqua regia? How does it dissolve gold?
  - What happens when following compounds are heated with conc.  $H_2SO_4$ ?  
(a)  $C_6H_{12}O_6$  (b)  $H_5C_2OH$
  - What are macro-nutrients? Give their names.
  - Give four properties of a good fertilizer.
  - State the term "Dissolved Oxygen (D.O.)". What is its use?
3. **Attempt any eight parts.** **8 × 2 = 16**
- Define the term Carbonization. Indicate three fractions obtained by the carbonization of coal.
  - Write structural formulas of the followings:  
(i) 3-n-Propyl-1, 4-Pentadiene (ii) Divinyl acetylene
  - Define heat of combustion with example.
  - How will you prepare m-chloronitrobenzene from benzene in two steps?
  - Write two objections that were raised on Kekule's structure for benzene molecule.
  - Write reaction of ethyl magnesium chloride with water.
  - Write an excellent method for the preparation of simple alkyl iodides.
  - Write structural formulas of these compounds: (i) Ethoxy propane (ii) Lactic acid
  - How ethanol is denatured to avoid its use for drinking purpose?
  - Write the structural formulas of these compounds: (i) Phthalic acid (ii) Acetic anhydride
  - What is zwitter ion? How it is formed?
  - What are essential and non-essential amino acids?
4. **Attempt any six parts.** **6 × 2 = 12**
- What are disproportionation reactions? Explain your answer with suitable example.
  - $HF$  is weaker acid than  $HCl$ . Why?
  - Arrange these ions in order of increasing size.  $F^-$ ,  $I^-$ ,  $Cl^-$ ,  $Br^-$
  - Why does damaged tin plated iron get rusted quickly?
  - Describe general mechanism of base-catalyzed addition reaction of carboxyl compounds.
  - How will you distinguish between ethanal and propanone?
  - Draw cyclic structure of glucose and fructose.
  - Define acid number. What is rancidity?
  - What is meant by hardening of oil?

**SECTION-II****NOTE: - Attempt any three questions.****8 × 3 = 24**

- (a) What are hydrides? Write down their classification and the properties of the covalent hydrides. 4
- (b) Describe the preparation of  $NaOH$  by Nelson's cell. 4
- (a) How will you manufacture wrought iron from cast iron? 4
- (b) What is smog? Explain the pollutants which are main cause of photochemical smog. 4
- (a) Define hybridization and explain the structure of Ethyne on the basis of hybridization. 4
- (b) What are Friedel-Crafts alkylation? Explain by giving two examples with mechanism. 4
- (a) Write down structural formulae for the following compounds: 4  
(i) Isobutylene (ii) But-1-ene-3-Yne  
(iii) 2, 5-Heptadiene (iv) Vinyl bromide
- (b) Explain following terms using ethyl alcohol as an example: 2 + 2  
(i) Esterification (ii) Ether formation (iii) Oxidation (iv) Dehydration
- (a) What are Grignard reagents? How can you prepare a primary, secondary and a tertiary alcohol with the help of Grignard reagent? 4
- (b) Write reaction equation for reaction of ethanal with: 4  
(i)  $NH_2OH$  (ii)  $NH_2 - NH_2$  (iii)  $H_2N - NHC_6H_5$  (iv) 2, 4-DNPH



## CHEMISTRY PAPER-II (NEW SCHEME) GROUP-I

TIME ALLOWED: 20 Minutes

OBJECTIVE

MAXIMUM MARKS: 17

**Note:** You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill that bubble in front of that question number. Use marker or pen to fill the bubbles. Cutting or filling two or more bubbles will result in zero mark in that question. Attempt as many questions as given in objective type question paper and leave others blank. No credit will be awarded in case BUBBLES are not filled. Do not solve questions on this sheet of OBJECTIVE PAPER.

Q.No.1

- (1) Which statement is incorrect?  
 (A) All the metals are good conductors of electricity. (B) All the metals are good conductor of heat.  
 (C) All the metals form positive ions. (D) All the metals form acidic oxides.
- (2) Which of the following Sulphates is not soluble in water?  
 (A) Sodium Sulphate (B) Potassium Sulphate (C) Zinc Sulphate (D) Barium Sulphate
- (3) Chemical composition of Colemanite is:  
 (A)  $Ca_2B_6O_{11} \cdot 5H_2O$  (B)  $CaB_4O_7 \cdot 4H_2O$  (C)  $Na_2B_4O_7 \cdot 4H_2O$  (D)  $CaNaB_5O_9 \cdot 8H_2O$
- (4) Among group VA elements, the most electronegative element is:  
 (A) Sb (B) N (C) P (D) As
- (5) The strongest acid is:  
 (A)  $HClO$  (B)  $HClO_2$  (C)  $HClO_3$  (D)  $HClO_4$
- (6) Coordination number of  $Pt$  in  $[PtCl(NO_2)(NH_3)_4]$  is:  
 (A) 2 (B) 4 (C) 1 (D) 6
- (7) Select from the following the one which is alcohol.  
 (A)  $CH_3-CH_2-OH$  (B)  $CH_3-O-CH_3$  (C)  $CH_3COOH$  (D)  $CH_3-CH_2-Br$
- (8) Which one of the following gases is used for artificial ripening of fruits?  
 (A) Ethene (B) Ethyne (C) Methane (D) Propane
- (9) Aromatic hydrocarbons are the derivatives of:  
 (A) Normal series of paraffins (B) Alkene (C) Benzene (D) Cyclohexane
- (10) When  $CO_2$  is made to react with ethyl magnesium iodide, followed by acid hydrolysis, the product formed is:  
 (A) Propane (B) Propanoic acid (C) Propanal (D) Propanol
- (11) According to Lewis concept ethers behave as:  
 (A) Acid (B) Base (C) Catalyst (D) Enzyme
- (12) Which of the following will have the highest boiling point?  
 (A) Methanal (B) Ethanal (C) Propanal (D) 2-Hexanone
- (13) Which of the following is used in the manufacture of synthetic fibre?  
 (A) Formic acid (B) Oxalic acid (C) Carbonic acid (D) Acetic acid
- (14) Which one of the following statements about glucose and sucrose is incorrect?  
 (A) Both are soluble in water (B) Both are naturally occurring  
 (C) Both are Carbohydrates (D) Both are disaccharides
- (15) In which of these processes are small organic molecules made into macromolecules?  
 (A) The cracking of petroleum fractions (B) The fractional distillation of crude oil  
 (C) The polymerization of ethene (D) The hydrolysis of proteins
- (16) Micronutrients are required in quantity ranging from:  
 (A) 4-40 g (B) 6-200 g (C) 6-200 kg (D) 4-40 kg
- (17) Ecosystem is the smaller unit of:  
 (A) Lithosphere (B) Hydrosphere (C) Atmosphere (D) Biosphere

**INTERMEDIATE PART-II (12<sup>th</sup> CLASS)****CHEMISTRY PAPER-II (NEW SCHEME) GROUP-II**

TIME ALLOWED: 2.40 Hours

**SUBJECTIVE**

MAXIMUM MARKS: 68

**NOTE: - Write same question number and its part number on answer book, as given in the question paper.****SECTION-I**

2. **Attempt any eight parts.** **8 × 2 = 16**
- Why ionization energy decreases down the group?
  - Why metallic character increases from top to bottom in a group of metals?
  - Why 2 % gypsum is added in the cement?
  - Why is  $CO_2$  a gas at room temperature while  $SiO_2$  is a solid?
  - Name four important Boric acids.
  - Write down the formulas of: (i) Kaolin (Pottery clay) (ii) Zircon
  - Write down the structural formulas of: (i) Nitrous acid ( $HNO_2$ ) (ii) Nitric acid ( $HNO_3$ )
  - Write down two uses of Nitric acid.
  - Complete and balance the following equations:
    - $H_2S + NO \longrightarrow$
    - $NO_2 + H_2O \longrightarrow$
  - Name eight macronutrients of fertilizers.
  - Write down two important raw materials used for the manufacture of cement.
  - What is chemical oxygen demand (COD)? How it can be determined?
3. **Attempt any eight parts.** **8 × 2 = 16**
- What are heterocyclic compounds? Give two examples.
  - How is 2-Butyne converted into Cis-2-Butene?
  - How would you establish that ethylene contains a double bond? Justify your answer with a chemical reaction.
  - Give two objections to Kekule's formula of Benzene.
  - How is benzene prepared from the given compounds? (a) n-Hexane (b) Sodium benzoate
  - Give reactions of ethyl chloride with: (a) Sodium metal (b) Sodium lead alloy
  - Give the reactions of a Grignard's Reagent with (a) Ethanol (b) Cyanogen Chloride
  - What is denaturing of alcohol?
  - State term esterification with an example.
  - Give a reaction in which -COOH group is reduced to  $-CH_3$  group.
  - What is Zwitter ion? Give an example.
  - How is vinegar prepared from ethanol?
4. **Attempt any six parts.** **6 × 2 = 12**
- Give reaction of bleaching powder with excess of Sulphuric acid. How the activity of bleaching powder is measured.
  - Give two uses of Argon.
  - Give reactions of  $X_eF_4$  with (i) Hg (ii)  $NH_3$
  - Under what conditions, does aluminium corrode?
  - Give any four uses of Formaldehyde.
  - How will you distinguish between methanal and ethanal?
  - Define saponification number.
  - In what ways fats and oils are different? Give example.
  - What are thermoplastic polymers? Give example.

**SECTION-II**

- NOTE: - Attempt any three questions.** **8 × 3 = 24**
- Define electron affinity. Explain trends of electron affinity in groups and periods. 4
    - Complete and balance the given equations: (i)  $Mg(OH)_2 \xrightarrow{Heat}$  4  
 (ii)  $Li_2O + H_2O \longrightarrow$  (iii)  $Na_2O_2 + H_2O \longrightarrow$  (iv)  $NaNO_3 \xrightarrow{Heat}$
  - Write down the chemical equations for the reaction of  $K_2Cr_2O_7$  with: 4  
 (i)  $H_2S$  (ii)  $FeSO_4$  (iii)  $KI$  (iv)  $NaCl$
    - What is smog? Write down the conditions required for its formation. 4
  - Define Hybridization and explain the structure of ethyne on its basis. 4
    - What are aromatic hydrocarbons? How are they classified? 4
  - How will you convert ethyne to? (i) Ethene (ii) Acetaldehyde (iii) Divinyl acetylene (iv) Glyoxal 4
    - Write down any two methods for the preparation of phenol. 4
  - How  $C_2H_5-Mg-Br$  reacts with (i)  $CO_2$  (ii)  $HCHO$  (iii)  $CH_3-CO-CH_3$  (iv)  $CH_3CHO$  4
    - Explain Aldol condensation with its mechanism. 4



**CHEMISTRY PAPER-II (NEW SCHEME) GROUP-II**

TIME ALLOWED: 20 Minutes

**OBJECTIVE**

MAXIMUM MARKS: 17

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Q.No.1

- (1) Mark the correct statement: (A) All lanthanides are present in the same group  
(B) All halogens are present in the same period (C) All the alkali metals are present in the same group  
(D) All the noble gases are present in the same period
- (2) Chile saltpetre has the chemical formula:  
(A)  $NaNO_3$  (B)  $KNO_2$  (C)  $Na_2B_4O_7$  (D)  $Na_2NO_3 \cdot H_2O$
- (3) Which metal is used in the thermite process because of its activity?  
(A) Iron (B) Copper (C) Aluminium (D) Zinc
- (4) Which of the following species has the maximum number of unpaired electrons?  
(A)  $O_2$  (B)  $O_2^+$  (C)  $O_2^-$  (D)  $O_2^{2-}$
- (5) Which of the following hydrogen halide is the weakest acid in solution?  
(A)  $HF$  (B)  $HBr$  (C)  $HI$  (D)  $HCl$
- (6) Which of the following is a non-typical transition element?  
(A)  $Cr$  (B)  $Mn$  (C)  $Zn$  (D)  $Fe$
- (7) The state of hybridization of carbon atom in methane is:  
(A)  $sp$  (B)  $sp^2$  (C)  $sp^3$  (D)  $dsp^2$
- (8) Preparation of vegetable ghee involves:  
(A) Halogenation (B) Hydrogenation (C) Hydroxylation (D) Dehydrogenation
- (9) Which of the following can be used as a catalyst in Friedel-Crafts reactions?  
(A)  $AlCl_3$  (B)  $HNO_3$  (C)  $BeCl_2$  (D)  $NaCl$
- (10)  $S_N2$  reactions can be best carried out with:  
(A) Primary alkyl halides (B) Secondary alkyl halides (C) Tertiary alkyl halides (D) All of these
- (11) Ethanol can be converted into ethanoic acid by:  
(A) Hydrogenation (B) Hydration (C) Oxidation (D) Fermentation
- (12) Which one of the following will have the highest boiling point?  
(A) Methanal (B) Ethanal (C) Propanal (D) 2-Hexanone
- (13) Amyl acetate has the flavour of:  
(A) Apricot (B) Banana (C) Orange (D) Jasmine
- (14) Which of the following elements is not present in all proteins?  
(A) Carbon (B) Hydrogen (C) Nitrogen (D) Sulphur
- (15) Vegetable oils are:  
(A) Unsaturated fatty acids (B) Glycerides of unsaturated fatty acids  
(C) Glycerides of saturated fatty acids (D) Essential oils obtained from plants
- (16) Which woody raw material is used for the manufacture of paper pulp?  
(A) Cotton (B) Bagasse (C) Poplar (D) Rice straw
- (17) A single Chloride free radical can destroy how many Ozone molecules?  
(A) 100 (B) 100000 (C) 10000 (D) 1000

**BOARD OF INTERMEDIATE AND SECONDARY EDUCATION, MULTAN**  
**OBJECTIVE KEY FOR INTERMEDIATE ANNUAL EXAMINATION, 2019**

Name of Subject: Chemistry

Session: New Scheme

Group: 1st

Group: 2nd

Q. Nos	Paper Code 4481	Paper Code 4483	Paper Code 4485	Paper Code 4487
1	D /	C /	A /	B /
2	D /	B /	B /	D /
3	A /	B /	C /	D /
4	B /	D /	B /	A /
5	D /	D /	B /	B /
6	D /	D /	D /	C /
7	A /	C /	D /	B /
8	B /	B /	D /	B /
9	C /	D /	C /	D /
10	B /	D /	B /	D /
11	B /	D /	D /	D /
12	D /	A /	D /	C /
13	D /	B /	D /	B /
14	D /	D /	A /	D /
15	C /	D /	B /	D /
16	B /	A /	D /	D /
17	D /	B /	D /	A /
18				
19				
20				

Q. Nos	Paper Code 4482	Paper Code 4484	Paper Code 4486	Paper Code 4488
1	C /	D /	C /	D /
2	A /	B /	C /	B /
3	C /	D /	B /	C /
4	A /	B /	A /	B /
5	A /	C /	A /	C /
6	C /	B /	C /	A /
7	C /	C /	D /	C /
8	B /	A /	B /	A /
9	A /	C /	D /	A /
10	A /	A /	B /	C /
11	C /	A /	C /	C /
12	D /	C /	B /	B /
13	B /	C /	C /	A /
14	D /	B /	A /	A /
15	B /	A /	C /	C /
16	C /	A /	A /	D /
17	B /	C /	A /	B /
18				
19				
20				