Inter - (Part-II)-A/2023 | Subject Code | 6 | 4 | 6 | 3

Roll No._____ to be filled in by the candidate

(For All Sessions)

Time:20 Minutes

CHEMISTRY (Objective)

(GROUP - I) Rwp-12-1-23

Marks:17

NOTE: Write answers to the questions on objective answer sheet provided. Four possible answers A, B, C& D to each question are given. Which answer you consider correct, fill the corresponding circle A, B, C or D given in front of each question with marker or pen ink on the answer sheet provided.

1.1. Nylon-6,6 is replaced by the reaction of hexamethylene diamine and _____ acid :
(A) Methanoic (B) Acetic (C) Adipic (D) Benzoic

2. Micronutrients required for plant growth is in the range of _____ per acre.
(A) 5 Kg to 200 Kg (B) 6 Kg to 200 Kg (C) 6 Kg to 250 Kg (D) 7 Kg to 250 Kg

3. The yellow colour in photochemical smog is due to :
(A) NO (B) NO_2 (C) N_2O (D) N_2O_5

4. Mendeleev in his periodic table arranged the elements according to their :
(A) Atomic number (B) Atomic mass (C) Proton number (D) None of these

5. Which one of the following does not belong to alkaline earth metals :
(A) Be (B) Ra (C) Ba (D) Rn

6. Chemical formula for colemanite is :
(A) $Ca_2B_6O_{11} . 5H_2O$ (B) $CaB_4O_7 . 4H_2O$ (C) $Na_2B_4O_7 . 4H_2O$ (D) $CaNaBO_2$

7. Oxidation of NO in air produces :
(A) N_2O (B) N_2O_3 (C) N_2O_4 (D) N_2O_5

8. Correct electronic configuration of zero group elements is :
(A) S^2P^2 (B) S^2P^4 (C) S^2P^5 (D) S^2P^6

9. f-block elements are also called_____ transition elements.
(A) Non- typical (B) Outer (C) Normal (D) Inner

10. The state of Hybridization in methane is :
(A) Sp (B) Sp^2 (C) Sp^3 (D) Sp^4

11. Chemical formula of chloroform is :
(A) CH_3Cl (B) CCl_4 (C) CH_2Cl_2 (D) $CHCl_3$

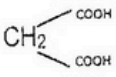
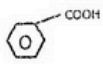
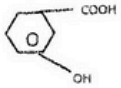
12. Which of the following acid acts as catalyst in Friedel-crafts reactions.
(A) $AlCl_3$ (B) HNO_3 (C) $BeCl_2$ (D) NaCl

13. Grignard reagent is reactive due to presence of _____.
(A) Halogen atom (B) Mg- atom (C) Polarity of C-Mg bond (D) Carbon atom

14. Ethanol can be converted into ethanoic acid by :
(A) Hydrogenation (B) Hyderation (C) Oxidation (D) Fermentation

15. Which enzymes are involved in the fermentation of starch?
(A) Urease (B) Maltase (C) Diastase (D) Both (B) & (C)

16. Aldehyde and small methyl Keytones give _____ test :
(A) Fehling solution (B) Silver mirror (C) Benedict's solution (D) Sodium Bisulphite

17. Formula for oxalic acid :
(A)  (B)  (C)  (D) 

No._____ to be filled in by the candidate

Inter - (Part-II)-A-2023

Chemistry (Subjective)

(For All Sessions)

(GROUP-I)

Rwp-12-1-23

Time: 2:40 Hours

Section- I

Marks:68

2- **Write short answers of any eight parts from the following:** (2 x 8 = 16)

i. Why is CO_2 a gas while SiO_2 is a solid at room temperature?

ii. What is chemical Garden?

iii. How does borax ionize in water?

iv. How can you prepare the m-chloronitrobenzene in two steps from benzene?

v. Differentiate between isolated and fused aromatic hydrocarbon?

vi. Write down the structures of following compounds:
a) Benzoic Acid b) Benzaldehyde

vii. Differentiate between thermosetting and thermoplastic polymers.

viii. What is saponification number?

ix. Discuss the effect of temperature on enzymes.

x What is Chemical Oxygen Demand (COD)?

xi. How is oil spillage affecting the marine life?.

xii Write down the human activities which lead to produce SO_x.

3- **Write short answers of any eight parts from the following:** (2 x 8 = 16)

i. Write the functional group with example of alkanal and alkanol.

ii. What do you know about position isomerism?

iii. How will you bring out the following conversions ?
(a).Acetic acid to ethane (b) Methane to nitro methane

iv. Starting from ethene prepare:
(i) Ethane (ii) Ethylene glycol

v. Give the reactivity order of alkane, alkene and alkyne.

vi. How does Grignard reagent react with CO_2?

vii. Write two methods for the preparation of alkyl halides from alcohols.

viii. Write the names of any four non woody raw material used in paper industry..

ix. What are the macro nutrients?

x. Write any four similarities of oxygen with sulphur.

xi. Why does aqua regia dissolve gold?

xii. P_2O_5 is powerful dehydrating agent. Prove by giving two examples.

4- **Write short answers of any six parts from the following:** (2 x 6 = 12)

i. Under what conditions does Al corrode?

ii. What is central metal atom?

iii. What is coordination sphere?

iv. How is phenol prepared from chlorobenzene?.

v. How will you distinguish between methanol and ethanol?

vi. How is benzene prepared from phenol?

vii. Give general mechanism of base catalysed addition reaction of carbonyl compounds.

viii. What is fehling solution test?

ix. How is Acetamide prepared from acetic acid?

Section- II

(8 x 3 = 24

NOTE : **Answer any three questions from the following:**

5.(a) Discuss the position of Hydrogen with Group IV-A elements.

(b) Write down commercial preparation of sodium by Down's cell. (4+4

6.(a) Describe Backmann's method for the preparation of Bleaching powder.

(b) What is setting of cement? Discuss the reactions taking place between 1 – 7 days. (4+4

7.(a) Describe two important sources of organic compounds.

(b) What is meant by electrophilic substitution reaction? Explain Friedel-crafts alkylation with mechanism. (2+2 1+3)

8.(a) Prepare alkanes from:
i) alkyl halides (Two methods)
ii) Kolbe's electrolysis with mechanism

(b) Explain the mechanism of E1 reaction in detail. (2+2+4)

9.(a) Describe with mechanism of aldol condensation reaction. Why does formaldehyde not give this reaction.

(b) Write down the mechanism of reaction between acetic acid and ethanol. (3+1+4)