

Roll No. of Candidate: -

Chemistry (New Scheme)  
Time: 20 Minutes

(INTER PART-II) 419-(III)  
OBJECTIVE  
Code: 8485

Group: I

Paper: II  
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 circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question. Attempt as many questions as given in objective type question paper and leave other blank.

1. Formula of chloroform is:  
A)  $\text{CCl}_4$  B)  $\text{CHCl}_3$  C)  $\text{CH}_2\text{Cl}_2$  D)  $\text{CH}_3\text{Cl}$
2. The chemist who synthesized urea from ammonium cyanate was:  
A) Berzelius B) Kolbe C) Wohler D) Lavoisier
3. Which of these polymers is a synthetic polymer?  
A) animal fat B) starch C) cellulose D) polyester
4. Co-ordination number of Pt in  $[\text{Pt}(\text{Cl})(\text{NO}_2)(\text{NH}_3)_4]^{2+}$  is  
A) 1 B) 2 C) 4 D) 6
5. All of following are included in calcareous materials except:  
A) lime B) clay C) marble D) marine shell
6. The solution of which acid is used for seasoning of food?  
A) formic acid B) acetic acid C) benzoic acid D) butanoic acid
7. Oxidation of NO in air produces  
A)  $\text{N}_2\text{O}$  B)  $\text{N}_2\text{O}_2$  C)  $\text{N}_2\text{O}_4$  D)  $\text{N}_2\text{O}_5$
8. Rectified spirit contains about how many percent of alcohol?  
A) 80 % B) 85 % C) 90 % D) 95 %
9. The reaction between fat and NaOH is called:  
A) esterification B) hydrogenolysis C) fermentation D) saponification
10. Which of following element is not abundantly present in earth's crust?  
A) silicon B) aluminum C) sodium D) oxygen
11. Non-metals are present in which block of periodic table?  
A) s-block B) p-block C) d-block D) f-block
12. Which halogen occurs naturally in a positive oxidation state?  
A) fluorine B) Chlorine C) bromine D) iodine
13. For which mechanisms, the first step involved is the same?  
A)  $\text{E}_1$  and  $\text{E}_2$  B)  $\text{E}_2$  and  $\text{SN}_2$  C)  $\text{SN}_1$  and  $\text{E}_2$  D)  $\text{E}_1$  and  $\text{SN}_1$
14. Which of the following will have the highest boiling point?  
A) methanal B) ethanal C) propanal D) 2-hexanone
15. Aromatic hydrocarbons are the derivatives of:  
A) alkanes B) alkenes C) benzene D) cyclohexane
16. The pH range of the acid rain is:  
A) 7 - 6.5 B) 6.5 - 6 C) 6 - 5.6 D) less than 5
17. Which hydroxide gets decomposed on heating?  
A) LiOH B) NaOH C) KOH D) RbOH

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Note: Section I is compulsory. Attempt any THREE (3) questions from Section II.

## (SECTION - I)

## 2. Write short answers to any EIGHT questions.

(2 × 8 = 16)

- Why the values of the ionization energy decreases down the group?
- Why ZnO is regarded as amphoteric oxide?
- Why lime water turns milky with CO<sub>2</sub> but becomes clear with excess of CO<sub>2</sub>?
- How boric acid is prepared on commercial scale from Colemanite?
- Why Aluminium sheets are said to be corrosion free?
- Why CO<sub>2</sub> is a gas at room temperature while SiO<sub>2</sub> is a solid?
- How an aqua regia dissolves gold?
- How orthophosphoric acid is converted into pyro and metaphosphoric acid?
- How hot concentrated H<sub>2</sub>SO<sub>4</sub> reacts with Cu and Ag metals?
- Name four macronutrients and also mention per acre range of their requirement.
- Name any four parts of paper making machine.
- What is "Chemical Oxygen Demand (COD)"? How is it measured?

## 3. Write short answers to any EIGHT questions.

(2 × 8 = 16)

- What is "Catalytic Cracking"?
- Compounds containing double bonds are more reactive, give reason.
- Write mechanism for the addition of halogen in alkene.
- Prepare benzene from acetylene and n-hexane.
- Draw structural formulas of p-nitrotoluene and p-Dibenzylbenzene.
- Starting from suitable Grignard reagent prepare ethane and ethyl cyanide.
- Write reaction to prepare tetra ethyl lead and Nitro ethane.
- Prepare ethanol from starch.
- Convert ethanol to Iodoform.
- Write strecker synthesis to prepare amino acid.
- What is glacial acetic acid.
- Write structural formula of Lysine and Valine.

## 4. Write short answers to any SIX questions.

(2 × 6 = 12)

- What is an "Iodized Salt"?
- Why iodine has metallic luster? Justify.
- Name any two methods to manufacture bleaching powder. Also give reaction for this.
- Name different forms of Iron and mention which is the purest form?
- Describe Tollen's test for the identification of aldehydes.
- Write any four uses of formaldehyde.
- Define saponification number with a suitable example.
- Write two points of difference between a fat and oil.
- Differentiate with at least two points between "Amylose" and "Amylopectin".

## (SECTION - II)

- Explain "Hydration Energy" as periodic property. 4
  - Point out the eight differences between Li and its group members. 4
- What is meant by "Corrosion"? Explain electrochemical theory of corrosion. 4
  - What is "Acid Rain"? Give detailed effects of acid rain on environment. 4
- Write down any four important features of organic compounds. 4
  - Draw structural formulas of following compounds: 4
    - m-chlorobenzoic acid
    - 2, 4, 6 trinitrotoluene
    - p-hydroxybenzoic acid
    - m-nitrophenol
- How is ethyne converted into following compounds? 4
    - Acetaldehyde
    - Chloroprene
    - Acrylonitrile
    - Methyl nitrile
  - Name the following compounds according to I.U.P.A.C system: 4
    - H<sub>3</sub>C - C<sub>2</sub>H - C<sub>2</sub>H - O - C<sub>3</sub>H
    - H<sub>3</sub>C - O - C<sub>6</sub>H<sub>5</sub>
    - H<sub>3</sub>C<sub>2</sub> - CH - OH
    - (H<sub>3</sub>C)<sub>3</sub> COH
- Discuss "Aldol Condensation" with mechanism. 4
  - Using ethyl bromide as a starting material, how will you prepare the following compounds: 4
    - n-Butane
    - ethyl alcohol
    - propanoic acid
    - ethene

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