1218 Warning:- Please write your Roll No. in the space provided and sign. Roll No----------
(Inter Part – II) (Session 2015-17 & 2016-18) Sig. of Student ----------

Chemistry (Objective) **Group – I** **Paper (II)**

Time Allowed:- 20 minutes **PAPER CODE 4481** 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 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. Write **PAPER CODE, which is printed on this question paper,** on the both sides of the Answer Sheet and fill bubbles accordingly, otherwise the student will be responsible for the situation. Use of Ink Remover or white correcting fluid is not allowed.

Q. 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. Which element is deposited at the cathode during the electrolysis of brine in diaphragm cell
   (A) H_2 (B) Na (C) Cl_2 (D) O_2
3. Which element belongs to group IV A of the periodic table
   (A) Barium (B) Iodine (C) Lead (D) Oxygen
4. Oxidation of NO in air produces
   (A) N_2O (B) N_2O_3 (C) N_2O_4 (D) N_2O_5
5. Hydrogen bond is the strongest between the molecules of
   (A) HF (B) HCl (C) HBr (D) HI
6. Coordination number of Pt in $[Pt\ Cl\ (NO_2)(NH_3)_4]$
   (A) 2 (B) 4 (C) [illegible] (D) 6
7. Ethers show the phenonenom of
   (A) Position isomerism (B) Functional group isomerism (C) Metamerism (D) Cis-trans isomerism
8. $\beta - \beta'$ dichloroethyl sulphide is commonly known as
   (A) Mustard gas (B) Laughing gas (C) Phosgene gas (D) Bio gas
9. Benzene can not undergo
   (A) Substitution reaction (B) Addition reaction (C) Oxidation reaction (D) Elimination reaction
10. Grignard reagent is reactive due to
    (A) Presence of halogen atom (B) Presence of Mg atom (C) The polarity of C-Mg bond (D) The polarity of Mg-X bond
11. Which enzyme is not involved in fermentation of starch?
    (A) Diastase (B) Zymase (C) Urease (D) Maltase
12. Cannizzaro's reaction is not given by
    (A) Formaldehyde (B) Acetaldehyde (C) Benzaldehyde (D) Trimethyl acetaldehyde
13. Which acid is used in the manufacture of synthetic fibre?
    (A) Formic acid (B) Oxalic acid (C) Carbonic acid (D) Acetic acid
14. Which of these polymers is a synthetic polymer.
    (A) Animal fat (B) Starch (C) Cellulose (D) Polyester
15. Which three elements are needed for the healthy growth of plants
    (A) N , S , P (B) N , Ca , P (C) N , P , K (D) N , K , C
16. Peroxyacetylnitrate (PAN) is an irritant to human beings and it affects
    (A) Eyes (B) Ears (C) Stomach (D) Hands
17. Fungicides are pesticides which
    (A) Control the growth of fungus (B) Kills insects (C) Kills plants (D) Kill herbs

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1218 (Inter Part-II) (Session 2015-17 & 2016-18)

Chemistry (Subjective) **Group – I** Paper (II)

Time Allowed: 2.40 hours Maximum Marks: 68

SAR

SECTION ---------- I

2. Answer briefly any EIGHT parts from the followings:- 8×2=16

(i) ZnO is amphoteric in nature. Justify.

(ii) Diamond is bad conductor while graphite is a good conductor why?

(iii) How is lime mortar prepared?

(iv) Write formulae of the following ores.(i) Talc (ii) Zircon

(v) Write two uses of Aluminium.

(vi) Give chemistry of Borax-bead Test.

(vii) P_2O_5 is a powerful dehydrating agent. Show with two examples.

(viii) What is aqua Regia? How does it dissolves gold?

(ix) What are heterocyclic compounds? Give two examples.

(x) What is Biochemical Oxygen demand?

(xi) What is [illegible]re?

(xii) How does H_2SO_4 react with (i) Zn (ii) Cu

3. Answer briefly any EIGHT parts from the followings:- 8×2=16

(i) Name different forms of Iron and mention which is the purest form.

(ii) What do you mean by the term Galvanizing.

(iii) Define functional group and write two oxygen containing functional groups.

(iv) Convert ethene to (a) Halohydrin (b) Ethylene oxide

(v) Why alkene is more reactive than benzene?

(vi) Write two possible structures of C_4H_9Cl.

(vii) What is Dow's method for the preparation of phenol.

(viii) How methanol and ethanol can be distinguished; give a suitable test for this.

(ix) Describe Tollen's test for the identification of aldehydes.

(x) Write any four uses of formaldehyde.

(xi) How acetamide is formed from acetic acid.

(xii) Differentiate between acidic amino acids and basic amino acids.

4. Answer briefly any SIX parts from the followings:- 6×2=12

(i) What is glycogen? Give its properties.

(ii) What is the chemical nature of Enzymes?

(iii) What do you mean by rancidity of fats and oils?

(iv) Why neutral sulphite semichemical process is mostly used in paper industry.

(v) Explain NH_3 as nitrogenous fertilizer.

(vi) What are fertilizers? Why are they needed.

(vii) Why the oxyacids of chlorine are stronger than oxyacids of bromine?

(viii) Why Hydrogen fluoride cannot be stored in glass containers?

(ix) Complete the following reactions. (a) $CaOCl_2 + H_2SO_4 \xrightarrow[excess]{} ?$ (b) $CaOCl_2 + 2HCl \longrightarrow ?$

SECTION ---------- II

(8 x 3 = 24)

Note: Attempt any three questions from the following.

5. (a) Why hydrogen cannot be placed above alkali metals and halogens?
   (b) Discuss the functions of calcium in plant growth?
6. (a) Describe the Bessemer's process for the manufacture of steel.
   (b) What do you know about water pollution? How is water polluted by industrial effluents?
7. (a) What is cracking? Explain its three types.
   (b) Define sulphonation of benzene. Write its mechanism.
8. (a) Write down four methods of preparation of Alkane. Two from alkyl halides and two from carbonyl compounds i.e. (aldehyde and ketone)
   (b) How will you convert? (i) Methanol into ethanol (ii) Acetone into ethyl alcohol.
9. (a) Explain S_N2 mechanism in detail write 8(eight) points.
   (b) Describe Mechanism for (i) Cannizzaro's reaction (ii) Aldehyde with $NH_2 - OH$

SAR

1218 Warning:- Please write your Roll No. in the space provided and sign. Roll No----------

(Inter Part – II) (Session 2015-17 & 2016-18) Sig. of Student ----------

Chemistry (Objective) **Group – II** **Paper (II)**

Time Allowed:- 20 minutes **PAPER CODE 4488** 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 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. Write **PAPER CODE, which is printed on this question paper,** on the both sides of the Answer Sheet and fill bubbles accordingly, otherwise the student will be responsible for the situation. Use of Ink Remover or white correcting fluid is not allowed.

Q.1

1) Which Enzyme is not involved in fermentation of starch?

(A) Diastase (B) Zymase (C) Urease (D) Maltase

2) Formaline is a solution of ..... formaldehyde in water

(A) 10 % (B) 20 % (C) 40 % (D) 60 %

3) The solution of which acid is used for seasoning of food?

(A) Formic acid (B) Acetic acid (C) Benzoic acid (D) Butanoic acid

4) Which one of the following Enzymes brings about the Hydrolysis of fats?

(A) Urease (B) Maltase (C) Zymase (D) Lipase

5) Peroxyacetylnitrate (PAN) is an irritant to human beings and it affects.

(A) Eyes (B) Ears (C) Nose (D) Stomach

6) The main pollutant of leather tanneries in the waste water is due to the salt of

(A) Lead (B) Chromium (vi) (C) Copper (D) Chromium (iii)

7) For which crop, Ammonium nitrate fertilizer is not used?

(A) Cotton (B) Wheat (C) Sugarcane (D) Paddy rice

8) Zinc oxide is

(A) Acidic (B) Basic (C) Neutral (D) Amphoteric

9) Which one of the following does not belong to alkaline Earth metals?

(A) Be (B) Ra (C) Ba (D) Rn

10) Which element forms an ion with charge +3

(A) Beryllium (B) Aluminium (C) Carbon (D) Silicon

11) Laughing gas is chemically

(A) NO (B) N_2O (C) NO_2 (D) N_2O_4

12) Hydrogen bond is the strongest b/w the molecules of

(A) HF (B) HCl (C) HBr (D) HI

13) Which of the following is a typical transition metal?

(A) Sc (B) Y (C) Ra (D) Co

14) Linear shape is associated with which set of hybrid orbitals?

(A) sp^3 (B) sp^2 (C) sp (D) dsp^2

15) Formula of chloroform is

(A) CH_3Cl (B) $CHCl_3$ (C) CH_2Cl_2 (D) CCl_4

16) Amongst the following, the compound that can be the most readily sulphonated is

(A) Toluene (B) Benzene (C) Nitrobenzene (D) Chlorobenzene

17) Which one of the following is not a nucleophile.

(A) H_2O (B) BF_3 (C) H_2S (D) NH_3

SAR.

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1218 (Inter Part - II) (Session 2015-17 & 2016-18)

Chemistry (Subjective) **Group (II)** **Paper (II)**

Time Allowed: 2.40 hours Maximum Marks: 68

Section ---------- I

2. Answer briefly any Eight parts from the followings:- **8 × 2 = 16**

(i) Why size of an anion is always greater to that of its parent atom?
(ii) Hydration energy decreases in the group from top to bottom, why?
(iii) How Gypsum can be converted to plaster of paris?
(iv) Write reactions for (a) Boarax is heated with CoO. (b) Al_2O_3 is heated with NaOH solution.
(v) What is sodium silicate; how it can be prepared?
(vi) Write chemical formulae for the following minerals. (a) Cryolite (b) Colemanite
(vii) Write two points to show peculiar behaviour of Carbon from its group members.
(viii) P_2O_5 is a powerful dehydrating agent. Prove it by giving two examples.
(ix) Give the reactions of contact process for the manufacture of Sulphuric acid.
(x) Write down any four points of dissimilarities between oxygen and sulphur.
(xi) Write role of chlorofluoro carbons (*CFCs*) in destroying ozone.
(xii) Differentiate between primary and secondary pollutant with examples.

3. Answer briefly any Eight parts from the followings:- **8 × 2 = 16**

(i) What is d – d transition? **(ii)** What is Wurtz – fittig reaction?
(iii) Compare cast iron, wrought iron and steel with reference to percentage of carbon?
(iv) Distinguish ethene from ethyne by a chemical reaction.
(v) Define polymerization. How high quality polyethylene is prepared?
(vi) What is excellent method for the preparation of alkyl iodides? Give an example.
(vii) Define the following terms (a) Phenols (b) Oxonium ion
(viii) Why phenol is acidic in nature but benzene is not acidic in nature?
(ix) Prepare each of following compounds from acetaldehyde (a) Lactic Acid (b) Acetic Acid.
(x) Give general mechanism of base catalyzed addition reaction.
(xi) What are fatty acids? Give an example. **(xii)** What are α – Aminoacids? Give their importance.

4. Answer briefly any Six parts from the followings:- **6 × 2 = 12**

(i) What is different between glucose and fructose?
(ii) What are thermoplastic polymers? Give an example?
(iii) What are derived proteins? Give two examples.
(iv) Name principal methods for chemical pulping used for production of paper?
(v) Define micro nutrients with examples? **(vi)** What are the requirements of a fertilizer?
(vii) Write down names and formulae of four oxyacids of Chlorine?
(viii) Give two uses of bromine. **(xi)** Give four applications of noble gases?

Section ---------- II

Note: Attempt any three questions. **(8 × 3 = 24)**

5. (a) State Mendeleev's periodic Law. What are the improvements made in the Mendeleev's periodic table?
   (b) Mension the properties of Beryllium in which it does not resemble with its own family.
6. (a) Describe the Bessmer's process for the manufacture of steel.
   (b) Describe the hydrosphere and lithosphere of environment.
7. (a) What are homocyclic and heterocyclic compounds? Give one example of each.
   (b) Draw the structural formulae for the following compounds. (i) m-chlorobenzoic acid. (ii) P-nitroaniline (iii) 2-amino-5-bromo-3-nitro-benzene sulphonic acid. (iv) m-Nitrophenol
8. (a) How phenol reacts with (i) H_2SO_4 (ii) Hydrogen. How C_2H_5OH reacts with (i) $CH_3 - Mg - I$ (ii) $SOCl_2$
   (b) Prepare Alkanes from (i) Carbonyl compounds (aldehydes & ketones) (ii) Grignards reagent (iii) Alkyl halide
9. (a) Write reactions of ethyl magnesium bromide followed by acid hydrolysis with following compounds.
   (i) HCHO (ii) CH_3CHO (iii) $(CH_3)_2CO$ (iv) CO_2
   (b) Describe with mechanism aldol condensation. Why does formaldehyde not give this reaction?