Roll No. LHR-G1-12-18 (To be filled in by the candidate)

(Academic Sessions 2015 – 2017 & 2016 – 2018)

CHEMISTRY 218-(INTER PART – II) Time Allowed : 20 Minutes

Q.PAPER – II (Objective Type) GROUP – I Maximum Marks : 17

PAPER CODE = 8483

Note : Four possible answers A, B, C and D to each question are given. The choice which you think is correct, fill that circle in front of that question with Marker or Pen ink in the answer-book. Cutting or filling two or more circles will result in zero mark in that question.

1-1	The anhydride of $HClO_4$ is : (A) ClO_3 (B) ClO_2 (C) Cl_2O_5 (D) Cl_2O_7
2	During nitration of benzene, the active nitrating agent is : (A) NO_3 (B) NO_2^+ (C) NO_2^- (D) HNO_3
3	Which one of these polymers is a synthetic polymer : (A) Animal fat (B) Starch (C) Cellulose (D) Polyester
4	The main pollutant of leather tanneries in the waste water is due to the salts of : (A) Lead (B) Chromium (VI) (C) Copper (D) Chromium (III)
5	Keeping in view the size of atoms, which order is the correct one : (A) Mg > Sr (B) Ba > Mg (C) Lu > Ce (D) $Cl > I$
6	Formalin is : (A) 10% solution of formaldehyde in water (B) 20% solution of formaldehyde in water (C) 40% solution of formaldehyde in water (D) 60% solution of formaldehyde in water
7	Tincal is a mineral of : (A) Al (B) B (C) Si (D) C
8	Which enzyme is not involved in fermentation of starch : (A) Diastase (B) Zymase (C) Urease (D) Maltase
9	Peroxyacetylnitrate (PAN) is an irritant to human beings and it affects : (A) Eyes (B) Ears (C) Stomach (D) Nose
10	Which set of hybrid orbitals has planer triangular shape : (A) dSp^2 (B) Sp^3 (C) Sp^2 (D) Sp
11	Which one of the following is not an alkali metal : (A) Fr (B) Cs (C) Rb (D) Ra
12	Preparation of vegetable ghee involves : (A) Halogenation (B) Hydrogenation (C) Hydroxylation (D) Dehydrogenation
13	Co-ordination number of pt in $[pt\,Cl(NO_2)(NH_3)_4]$ is : (A) 2 (B) 4 (C) 1 (D) 6
14	For which mechanism, the first step involved is the same : (A) E_1 and E_2 (B) E_2 and S_N2 (C) S_N1 and E_2 (D) E_1 and S_N1
15	Which catalyst is used in contact process for preparing H_2SO_4 : (A) Fe_2O_3 (B) V_2O_5 (C) SO_3 (D) Ag_2O
16	Which of the following is not a fatty acid : (A) Propanoic acid (B) Acetic acid (C) Phthalic acid (D) Butanoic acid
17	Micro-nutrients are required in quantity ranging from : (A) 4 – 40 g (B) 6 – 200 g (C) 6 – 200 kg (D) 4 – 40 kg

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CHEMISTRY 218-(INTER PART – II) Time Allowed : 2.40 hours

PAPER – II (Essay Type) GROUP – I Maximum Marks : 68

SECTION – I

2. Write short answers to any EIGHT (8) questions : **16**

(i) Why diamond is a non-conductor and graphite is fairly a good conductor?

(ii) The hydration energy of the ions are in the order, justify it : $A\ell^{+3} > Mg^{+2} > Na^{+1}$

(iii) Why lime water turns milky with CO_2 but becomes clear with excess of CO_2.

(iv) Give any four uses of "$A\ell$".

(v) What happens when ortho boric acid reacts with : (i) NaOH (ii) Ethyl alcohol

(vi) What is vitreous silica, give its two uses?

(vii) NO_2 is a strong oxidizing agent, prove with the help of two reactions.

(viii) Give two reactions of H_2SO_4 which show its oxidizing behaviour.

(ix) Give four dissimilarities of oxygen and sulphur.

(x) What is BOD?

(xi) What is the role of chlorofluorocarbons in destroying ozone?

(xii) Explain cis-trans isomerism, give one example.

3. Write short answers to any EIGHT (8) questions : **16**

(i) Define ligand with an example.

(ii) What is the percentage (%) of carbon in different types of steel?

(iii) Why alkanes are less reactive organic compounds?

(iv) Convert : (a) Acetylene → Benzene (b) Vinyl acetylene → Chloroprene

(v) What is meant by nitration of benzene? Write its reaction.

(vi) What do you mean by leaving group? Give an example.

(vii) What is denaturing of alcohol?

(viii) How Lucas test is used to distinguish between primary, secondary and tertiary alcohol?

(ix) Write any four uses of acetaldehyde.

(x) How iodoform test can be used to distinguish methyl ketones from other ketones?

(xi) What is the difference between essential and non-essential amino acids?

(xii) How acetic acid reacts with : (a) $PC\ell_3$ (b) $SOC\ell_2$

4. Write short answers to any SIX (6) questions : **12**

(i) What is denaturation of proteins?

(ii) What are thermosetting polymers?

(iii) What is acid number?

(iv) What is clinker formation?

(v) Name two woody and two non-woody raw materials.

(vi) Give significance of potash fertilizer.

(vii) Write down the reactions of chlorine with cold and hot NaOH.

(viii) Write two uses of each helium and argon.

(ix) Why iodine has metallic luster?

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SECTION – II

Note : Attempt any THREE questions.

(a) How do you justify the position of hydrogen at the top of IA and VIIA groups of periodic table?

(b) Describe the manufacturing of Na metal by Down's cell, give advantages of this process.

(a) Explain the following properties of transition elements :
(i) Colour (ii) Chelate formation.

(b) Explain the process of incineration of industrial waste.

(a) Define cracking and give its types.

(b) Write down the classification of aromatic hydrocarbons giving one example each.

(a) How is ethane prepared by Kolbe's electrolytic method? Write its mechanism.

(b) Write two methods of preparation of phenol.

(a) Give the four points of difference between S_N1 and S_N2 reactions.

(b) What type of aldehydes give Cannizzaro's reaction? Give its mechanism.