Roll No. LHR. _____ (To be filled in by the candidate)

(Academic Sessions 2015 – 2017 to 2017 – 2019)

CHEMISTRY 219-(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	Hydrogen bond is the strongest between the molecules of : (A) $HC\ell$ (B) HBr (C) HI (D) HF
2	Aromatic hydrocarbons are the derivatives of : (A) Alkene (B) Benzene (C) Cyclohexene (D) Normal series of paraffins
3	The fibre which is made from acrylonitrile as monomer : (A) PVC (B) Rayon fibre (C) Acrylic fibre (D) Polyester fibre
4	The pH range of the acid rain is : (A) 7 – 6.5 (B) 6.5 – 6 (C) 6 – 5.6 (D) Less than 5
5	Mark the correct statement : (A) Na^+ is smaller than Na atom (B) Na^+ is larger than Na atom (C) $C\ell^-$ is smaller than $C\ell$ atom (D) $C\ell^-$ (ion) and $C\ell$ (atom) are equal in size
6	Which of the following will have the highest boiling point : (A) Mathanal (B) Ethanal (C) Propanal (D) 2-Hexanone
7	Boric acid cannot be used : (A) An antiseptic in medicine (B) For washing eyes (C) In soda bottles (D) For enamels and glazes
8	Which enzyme is not involved in fermentation of starch : (A) Urease (B) Zymase (C) Invertase (D) Diastase
9	Which woody raw material is used for the manufacture of paper pulp : (A) Cotton (B) Bagasse (C) Poplar (D) Rice straw
10	Which set of hybrid orbitals has planar triangular shape : (A) dSp^2 (B) Sp^3 (C) Sp^2 (D) Sp
11	Chile saltpetre has the chemical formula : (A) $NaNO_3$ (B) KNO_2 (C) $Na_2B_4O_7$ (D) $Na_2CO_3H_2O$
12	Vinyl acetylene combines with $HC\ell$ to form : (A) Chloroprene (B) Benzene (C) Poly acetylene (D) Divinyl acetylene
13	The percentage of carbon in different type of iron products is in the order of : (A) Cast iron > wrought iron > steel (B) Wrought iron > steel > cast iron (C) Cast iron > steel > wrought iron (D) Cast iron = steel > wrought iron
14	Elimination bimolecular reactions involve : (A) Zero order reactions (B) First order reactions (C) Second order reactions (D) Third order reactions
15	Laughing gas is chemically : (A) NO (B) N_2O (C) NO_2 (D) N_2O_4
16	Which acid is used in the manufacture of synthetic fibre : (A) Formic acid (B) Acetic acid (C) Oxalic acid (D) Carbonic acid
17	Which of these polymers is an addition polymer : (A) Nylon – 6, 6 (B) Polystyrene (C) Terylene (D) Epoxy resin

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CHEMISTRY 219-(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) Define periodic table. How many groups and periods are present in it?

(ii) Define (i) Mendeleev's periodic law (ii) Modern periodic law.

(iii) Differentiate between alkali metals and alkaline earth metals. Give one example in each case.

(iv) Write down the formulas of the following minerals : (i) Borax (ii) Colemanite

(v) Write down four uses of borax..

(vi) Define chemical garden.

(vii) Write down two similarities and two dissimilarities of oxygen and sulphur.

(viii) Write four differences of nitrogen from its family.

(ix) Why does aqua regia dissolve gold and platinum?

(x) Write down four essential qualities of a good fertilizer.

(xi) What are raw materials for the manufacture of cement?

(xii) Define environmental chemistry. Name components of environment.

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

(i) Define organic chemistry. What is vital force theory?

(ii) Write down structural formulas of the following :
(a) 2-Methyl propane (b) Neopentane (c) 3-Ethyl pentane (d) 2,2 – Dimethyl pentane

(iii) Write down four uses of methane.

(iv) Define aromatic hydrocarbons. How they are classified?

(v) What happens when (a) Benzene is heated with conc. H_2SO_4 at 250 $^{\circ}C$.
(b) Chlorine is passed through benzene in sunlight.

(vi) Define alkyl halides. What are primary alkyl halides? Give one example.

(vii) Define Grignard reagent. Give one example.

(viii) How ethanal is prepared from Molasses? Write chemical reaction as well.

(ix) Define : (a) Absolute alcohol (b) Methylated spirit (c) Rectified spirit.
(d) Denaturing of alcohol.

(x) Write down the structural formulae of the following :
(a) Propanoic acid (b) Oxalic acid (c) Benzoic acid (d) Acetic anhydride

(xi) How acetic acid is converted into the methane?

(xii) Define amino acids. Give two examples.

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

(i) What is iodized salt?

(ii) Why iodine has metallic luster?

(iii) Give four applications of noble gases.

(iv) What are interstitial compounds?

(v) How will you convert ethanal into lactic acid?

(Turn Over)

LHR.

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

PAPER CODE = 8484

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 strongest acid in halogen acids in solution is :			
	(A) HF	(B) $HC\ell$	(C) HBr	(D) HI
2	Molecular formula of benzyl chloride is :			
	(A) $H_5C_6CC\ell_3$	(B) $H_5C_6HC\ell_2$	(C) $H_5C_6CH_2C\ell$	(D) $H_5C_6CH_2.CH_2C\ell$
3	Which of these polymers is a synthetic polymer :			
	(A) Animal fat	(B) Starch	(C) Cellulose	(D) Polyester
4	Peroxyacetylnitrate is an irritant to human beings and it effects :			
	(A) Eyes	(B) Ears	(C) Stomach	(D) Nose
5	Which one of the following oxides is more basic :			
	(A) BeO	(B) SrO	(C) CaO	(D) MgO
6	The compound which reacts with Tollen's reagent :			
	(A) HCHO	(B) $H_3C.CO.CH_3$	(C) $H_3C.COOH$	(D) $H_3C.CO.C_2H_5$
7	The chief ore of aluminium is :			
	(A) $A\ell_2O_3$	(B) $A\ell_2O_3.H_2O$	(C) $A\ell_2O_3.2H_2O$	(D) $Na_3A\ell F_6$
8	Which is more soluble compound in H_2O :			
	(A) 1-Propanol	(B) Methanol	(C) Phenol	(D) n-Hexanol
9	Woody raw material used for manufacturing of paper pulp is :			
	(A) Poplar	(B) Rice straw	(C) Bagasse	(D) Cotton
10	The state of hybridization of carbon in ethylene is :			
	(A) Sp^3	(B) Sp^2	(C) Sp	(D) dSp^2
11	Which one of the following elements is not alkali metal :			
	(A) Na	(B) Sr	(C) Cs	(D) Fr
12	When 1-chloropropane is reacted with alcoholic KOH, the product obtained is :			
	(A) Propane	(B) Propene	(C) Propyne	(D) Butane
13	Oxidation state of Cu in $K_2[Cu(CN)_4]$ is :			
	(A) +4	(B) +3	(C) +2	(D) +6
14	Which one of the following is not a nucleophile :			
	(A) $BC\ell_3$	(B) NH_3	(C) H_2S	(D) H_2O
15	Which one of the following species has two unpaired electrons :			
	(A) O_2	(B) O_2^{1+}	(C) O_2^{1-}	(D) O_2^{2-}
16	The reagent used to reduce carboxylic group into an alcohol is :			
	(A) H_2/Pt	(B) H_2/Ni	(C) $NaBH_4$	(D) $LiA\ell H_4$
17	Which one of the following elements is not present in all proteins :			
	(A) Carbon	(B) Hydrogen	(C) Nitrogen	(D) Sulphur

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SECTION – I

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

(i) What is hydration energy? Give an example.

(ii) Why diamond is a non-conductor but graphite is a fairly good conductor?

(iii) How are lime and sand used to make glass?

(iv) How does orthoboric acid react with : (a) Sodium hydroxide (b) Ethyl alcohol

(v) Why is CO_2 a gas at room temperature while SiO_2 is a solid?

(vi) Why are borate glazes preferred over silicate glazes?

(vii) H_2SO_4 is a powerful dehydrating agent. Prove it giving two examples.

(viii) Why does aqua regia dissolve gold and platinum?

(ix) Write two similarities of oxygen and sulphur.

(x) What do you mean by prilling of urea?

(xi) State the reactions that take place during first 24 hours by the setting of cement.

(xii) How are detergents threat to aquatic animal life?

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

(i) How coal is produced from remain of trees?

(ii) Write structural formulas of : (a) 1,3-Butadiene (b) Vinyl bromide

(iii) State Markownikov's rule and give an example.

(iv) Write down the structural formulas of : (a) Biphenyl (ii) Diphenylmethane

(v) How the cyclic structure of benzene got verified?

(vi) Write down any two methods of preparation of alkyl halides.

(vii) What is Grignard's reagent? How is it prepared?

(viii) Absolute alcohol cannot be prepared by fermentation process. Give justification.

(ix) How can you distinguish between methanol and ethanol?

(x) What are essential and non-essential amino acids?

(xi) How will you carry out following conversion :
Acetic acid into acetone.

(xii) Write down the name and the structural formulas of two acidic amino acids.

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

(i) Which halogen sublimes as violet vapours?

(ii) Write reaction of $C\ell_2$ with cold and hot NaOH.

(iii) Halogens act as oxidizing agents, justify.

(iv) Give systematic name of $Na_3[CoF_6]$.

(v) Write Fehling's solution test.

(Turn Over)