

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

(Academic Sessions 2018 – 2020 to 2020 – 2022)

CHEMISTRY

222-(INTER PART – II)

Time Allowed : 20 Minutes

Q.PAPER – II (Objective Type)

GROUP – II **LHR-G2-22** 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 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 the following nitrogenous base is not present in RNA : (A) Cytosine (B) Adenine (C) Thiamine (D) Uracil
4	Ecosystem is a smaller unit of : (A) Lithosphere (B) Hydrosphere (C) Atmosphere (D) Biosphere
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	Which of the following reagents will react with both aldehydes and ketones : (A) Grignard reagent (B) Tollen's reagent (C) Fehling's reagent (D) Benedict's reagent
7	Tinical 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) Invertase
9	The main pollutant of leather tanneries in the waste water is due to : (A) Lead (B) Chromium (VI) (C) Copper (D) Chromium (III)
10	Linear shape is associated with which set of hybrid orbitals : (A) sp (B) sp^2 (C) sp^3 (D) dsp^2
11	Which ion will have the maximum value of heat of hydration : (A) Na^+ (B) Cs^+ (C) Ba^{++} (D) Mg^{++}
12	Vinyl acetylene combines with HCl to form : (A) Polystyrene (B) Benzene (C) Chloroprene (D) Divinyl acetylene
13	The colour of transition metal complexes is due to : (A) d-d- transition of electrons (B) Paramagnetic nature of transition elements (C) Ionization (D) Loss of s-electrons
14	In primary alkyl halides, the halogen atom is attached to a carbon which is further attached to how many carbon atoms : (A) Two (B) Three (C) One (D) Four
15	Which catalyst is used in contact process : (A) Fe_2O_3 (B) V_2O_5 (C) SO_3 (D) Ag_2O
16	Acetic acid is manufactured by : (A) Distillation (B) Fermentation (C) Ozonolysis (D) Esterification
17	Phosphorous helps in the growth of : (A) Root (B) Leave (C) Stem (D) Seed

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CHEMISTRY

222-(INTER PART – II)

Time Allowed : 2.40 hours

PAPER – II (Essay Type)

GROUP – II

LHR-G2-22

Maximum Marks : 68

SECTION – I

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

16

- (i) Lanthanide contraction controls the atomic sizes of elements of 6th and 7th periods. Give reason.
- (ii) Explain the variations in melting points along the short periods.
- (iii) Why is the aqueous solution of Na_2CO_3 alkaline in nature? Give reaction only.
- (iv) What happens when LiOH is heated to red hot? Give reaction.
- (v) How does boric acid react with : (a) Ethyl alcohol (b) Na_2CO_3
- (vi) Give chemistry of borax-bead test.
- (vii) Name the allotropes of phosphorus. How red phosphorus is prepared?
- (viii) Give the reaction of phosphorus with : (a) Thionyl chloride (b) $Cl_2(g)$
- (ix) Briefly discuss the property of paramagnetism in transition elements compounds.
- (x) What are : (a) Interstitial compounds. (b) Substitutional alloys.
- (xi) Briefly discuss the digestion process in paper manufacturing.
- (xii) Discuss the reactions taking place in first 24 hours of setting of cement.

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

16

- (i) Why HF is weaker acid than HCl?
- (ii) What are freons and teflon?
- (iii) Discuss carbonization of coal.
- (iv) Define functional group. Give one example.
- (v) Why is sigma bond inert?
- (vi) Discuss hydroxylation of ethene.
- (vii) How is water added to propyne? Write reaction.
- (viii) How are tetramethyl and tetraethyl lead prepared?
- (ix) How can 1-chloropropane be converted to propene?
- (x) Define polysaccharides, also give example.
- (xi) Differentiate between DNA and RNA.
- (xii) What is hardening of oils? Give reaction.

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

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- (i) What is Wurtz-Fitting reaction.
- (ii) What are polycyclic aromatic hydrocarbons? Give two examples.
- (iii) Convert phenol into : (a) 2, 4, 6 tribromophenol (ii) Cyclohexanol.
- (iv) Write equations for the preparation of ethanol by the fermentation of Molasses.
- (v) What is iodoform test?

(Turn Over)

(2)

4. (vi) Convert acetylene into acetic acid.
- (vii) Write down the structural formulas of Glycine and Alanine amino acids.
- (viii) How detergents are threat to aquatic animal life?
- (ix) Write down the four harmful effects of acid rain.

SECTION – II

Note : Attempt any THREE questions.

5. (a) Write down two points of similarities and two points of differences between hydrogen and halogen (VII A) 4
- (b) Give one method for the preparation of H_3BO_3 . How does it react with : 4
 - (i) NaOH (ii) Na_2CO_3 (iii) C_2H_5OH
6. (a) Discuss hard finish plasters and cement plaster. 4
- (b) How steel is manufactured by Bessemer process. 4
7. (a) Discuss structure of ethyne on the basis of sp-hybridization. 4
- (b) Convert ethyl bromide into : 4
 - (i) Ethane. (ii) Propane. (iii) Ethyl alcohol (iv) n-Butane
8. (a) Give the reaction of ethene with (i) H_2SO_4 (ii) O_3 (iii) HOX (iv) Br_2 4
- (b) Describe the various tests for identification of carboxyl compounds (Any four). 4
9. (a) Write the mechanism of nitration and sulphonation of benzene. 4
- (b) Describe the two reactions of alcohol and phenol in which "O – H" bond break. 4

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