

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

(Academic Sessions 2017 – 2019 to 2019 – 2021)

**CHEMISTRY**

221-(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) HF (B) HCl (C) HBr (D) HI
2	Formula of chloroform is : (A) $CH_3Cl$ (B) $CCl_4$ (C) $CH_2Cl_2$ (D) $CHCl_3$
3	Ketones are prepared by the oxidation of : (A) Primary alcohol (B) Secondary alcohol (C) Tertiary alcohol (D) All of these
4	Which is not a calcareous material : (A) Lime (B) Clay (C) Marble (D) Marine shell
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	Rectified spirit contains ethyl alcohol : (A) 80% (B) 85% (C) 90% (D) 95%
7	Tinical is a mineral of : (A) Al (B) B (C) Si (D) C
8	For which mechanism the first step involved is the same : (A) E1 and E2 (B) E2 and $S_N2$ (C) $S_N1$ and $S_N2$ (D) E1 and $S_N1$
9	Which of the following is not a fatty acid : (A) Propanoic acid (B) Butyric acid (C) Valeric acid (D) Phthalic acid
10	Which one of the following is a typical transition metal : (A) Sc (B) Y (C) Ra (D) Co
11	Which of the following sulphates is not soluble in water : (A) Sodium sulphate (B) Potassium sulphate (C) Zinc sulphate (D) Barium sulphate
12	Linear shape is associated with which set of hybrid orbitals : (A) $sp$ (B) $sp^2$ (C) $sp^3$ (D) $dsp^2$
13	Which halogen occurs in a positive oxidation state : (A) Fluorine (B) Chlorine (C) Bromine (D) Iodine
14	The electrophile in aromatic sulphonation is : (A) $H_2SO_4$ (B) $HSO_4$ (C) $SO_3$ (D) $SO_3^+$
15	Laughing gas is chemically : (A) NO (B) $N_2O$ (C) $NO_2$ (D) $N_2O_5$
16	The carbon atom of a carboxyl group is hybridized : (A) $sp$ (B) $sp^2$ (C) $sp^3$ (D) $dsp^2$
17	Which acid is used in the manufacture of synthetic fibre : (A) Formic acid (B) Oxalic acid (C) Carbonic acid (D) Acetic acid

Roll No \_\_\_\_\_ ( To be filled in by the candidate)

(Academic Sessions 2017 – 2019 to 2019 – 2021 )

**CHEMISTRY**

221-(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 the ionic radii of negative ions are larger than the size of their parent atoms?
- (ii) Why the graphite is a good conductor?
- (iii) Complete and balance the equations : (a)  $LiNO_3 \xrightarrow{Heat}$  (b)  $NaNO_3 \xrightarrow{Heat}$
- (iv) Why the aqueous solution of  $Na_2CO_3$  is alkaline in nature?
- (v) Give the chemical formulae of : (a) Kaolin (b) Feldspar
- (vi) Give the four differences of boron from other elements of group IIIA.
- (vii) Give four uses of borax.
- (viii) Give four similarities of sulphur and oxygen.
- (ix) Give four uses of sulphuric acid.
- (x) Mention any four qualities of a good fertilizer.
- (xi) Give the composition of a good Portland cement.
- (xii) Define the term ' setting of cement '. Also describe reactions taking place in first 24-hours?

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

16

- (i) Oxidizing power of halogen depends upon which factors.
- (ii) What do you know about disproportionation reactions? Give example.
- (iii) Give two uses of bleaching powder.
- (iv) What are interstitial compounds?
- (v) What is anode coating?
- (vi) Give four examples of ortho-para directing groups.
- (vii) Discuss catalytic oxidation of benzene.
- (viii) What is iodoform test? Give its uses.
- (ix) What do you know about silver mirror test?
- (x) How would you prepare carboxylic acids from Grignard Reagents?
- (xi) How would you prepare acid anhydride from acetic acid?
- (xii) Why first four members of aliphatic acids are soluble in water?

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

12

- (i) What are homocyclic and heterocyclic compounds? Give one example of each.
- (ii) Write the structural formulas of two possible isomers of  $C_4H_{10}$ .
- (iii) How is methane converted to ethane?
- (iv) Ozonolysis of alkene is used to locate the position of double bond, comment.
- (v) Why is sigma bond inert?

(Turn Over)

NO. \_\_\_\_\_ (To be filled in by the candidate) (Academic Sessions 2017 – 2019 to 2019 – 2021 )  
**CHEMISTRY** 221-(INTER PART – II) Time Allowed : 20 Minutes  
 Q.PAPER – II ( Objective Type ) GROUP – II Maximum Marks : 17

**PAPER CODE = 8482**

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	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 ion will have maximum value of heat of hydration : (A) $Na^+$ (B) $Cs^{+1}$ (C) $Ba^{+2}$ (D) $Mg^{+2}$
3	Which element forms an ion with charge +3 : (A) Be (B) Al (C) C (D) Si
4	Laughing gas is chemically : (A) $N_2O_4$ (B) $N_2O_2$ (C) $N_2O$ (D) NO
5	Which halogen will react spontaneously with Au(s) to produce $Au^{3+}$ : (A) $Br_2$ (B) $I_2$ (C) $Cl_2$ (D) $F_2$
6	Chlorine heptaoxide reacts with water to form : (A) $HClO$ (B) $HClO_4$ (C) $HClO_3$ (D) $HClO_2$
7	The strength of binding energy of transition elements depends upon : (A) Number of electron pairs (B) Number of unpaired electrons (C) Number of neutrons (D) Number of protons
8	Select from the following which one is an alcohol : (A) $CH_3-O-CH_3$ (B) $CH_3-CH_2-OH$ (C) $CH_3COOH$ (D) $CH_3-CH_2-Br$
9	Formula of chloroform is : (A) $CH_3Cl$ (B) $CCl_4$ (C) $CH_2Cl_2$ (D) $CHCl_3$
10	During nitration of benzene, the active nitrating agent is : (A) $NO_3$ (B) $NO_2$ (C) $NO_2^+$ (D) $HNO_3$
11	Elimination bimolecular reactions involve : (A) First order kinetics (B) Second order kinetics (C) Third order kinetics (D) Zero order kinetics
12	Ethanol can be converted into ethanoic acid by : (A) Hydrogenation (B) Oxidation (C) Hydration (D) Distillation
13	Which of the following reagents will react with both aldehydes and ketones : (A) Tollen's reagent (B) Fehling's solution (C) Grignard's reagent (D) Benedict solution
14	Ketones are prepared by the oxidation of : (A) Primary alcohol (B) Tertiary alcohol (C) Secondary alcohol (D) All of these
15	Which of the following is not a fatty acid : (A) Propanoic acid (B) Acetic acid (C) Phthalic acid (D) Butanoic acid
16	Rectified spirit contains ethyl alcohol : (A) 80% (B) 85% (C) 90% (D) 95%
17	Which is not a calcareous material : (A) Lime (B) Clay (C) Marble (D) Marine shell

Roll No \_\_\_\_\_ (To be filled in by the candidate)

(Academic Sessions 2017 – 2019 to 2019 – 2021 )

**CHEMISTRY**

221-(INTER PART – II)

Time Allowed : 2.40 hours

PAPER – II ( Essay Type )

GROUP – II

Maximum Marks : 68

**SECTION – I****2. Write short answers to any EIGHT (8) questions :**

16

- (i) What do you know about period 6 of the periodic table?
- (ii) Why  $Na^+$  is smaller than Na atom?
- (iii) What are alkali metals? Give name of alkali metals.
- (iv) Give two differences between lithium and other alkali metals.
- (v) Give chemical formulas of mica and bauxite.
- (vi) How would you prepare borax from colemanite?
- (vii) Give two uses of aluminium.
- (viii) Draw structural formulas of dinitrogen pentoxide and dinitrogen oxide.
- (ix) “ Sulphuric acid is a dehydrating agent”. Justify.
- (x) Write different steps involved in the manufacturing of urea.
- (xi) Why potassium fertilizers are important for plants?
- (xii) What reactions take place between 1 to 7 days during setting of cement?

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

16

- (i) Write any two uses of bleaching powder.
- (ii) What is disproportionation reaction? Give one example.
- (iii) Why HF is weaker acid than HCl?
- (iv) Why does damaged tin plated iron get rusted quickly?
- (v) Give the prevention of metals from corrosion.
- (vi) What are polycyclic aromatic hydrocarbons? Give examples.
- (vii) What information do we get from X-ray study of benzene?
- (viii) How does formaldehyde react with the following reagent : (a) HCN (b)  $NaHSO_3$
- (ix) How will you distinguish between methanal and ethanal?
- (x) Write any two reactions of carboxylic acids in which hydrogen atom of carboxylic group is involved.
- (xi) What is meant by oxidative cleavage of alkenes? Give an example.
- (xii) Write down the mechanism of ester formation.

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

12

- (i) Define catalytic cracking.
- (ii) Define homocyclic and heterocyclic compounds.
- (iii) Define hydrogenolysis. Give one example.
- (iv) Why sigma bond is inert?
- (v) How are cis and trans alkenes prepared from alkyne?

(Turn Over)