

1219 Warning:- Please write your Roll No. in the space provided and sign. Roll No. _____
(Inter Part – II) (Session 2015-17 to 2017-19) Sig. of Student _____

Chemistry (Objective)

(Group – I)

Paper II

Time Allowed:- 20 minutes

PAPER CODE 4485

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. I

- Which is not a calcareous material?
(A) Clay (B) Lime (C) Marble (D) Marine Shell
- 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)
- Which is more acidic oxide in the following?
(A) MnO (B) Mn_2O_3 (C) MnO_2 (D) Mn_2O_7
- General name of mineral $MgSO_4 \cdot 7H_2O$ is?
(A) Gypsum (B) Dolomite (C) Calcite (D) Epsom salt
- Chemical formula of litharge is?
(A) Pb_2O (B) SiO_2 (C) PbO (D) Pb_3O_4
- The lowest ionization energy is possessed by?
(A) P (B) N (C) Sb (D) As
- Which is the strongest oxidizing agent in the following?
(A) I_2 (B) Cl_2 (C) F_2 (D) Br_2
- Which one of these elements is a typical transition element?
(A) Ni (B) Zn (C) Cd (D) Hg
- Number of possible chain isomers of an alkane C_5H_{12} are?
(A) 2 (B) 3 (C) 4 (D) 5
- Structural formula of vinyl chloride is
(A) $HC \equiv C - Cl$ (B) $H_2C = CHCl$ (C) $H_3C - CHCl_2$ (D) $H_2C - \underset{\substack{| \\ Cl}}{C} - H_2$
- Which one of the following species is an electron withdrawing?
(A) $-CH_3$ (B) $-CHO$ (C) $-OH$ (D) $-NH_2$
- When ethyl magnesium bromide is reacted with HCHO, followed by acid hydrolysis, the product formed is?
(A) Ethanol (B) 1-propanol (C) 2-propanol (D) Ethanoic acid
- Which compound will have maximum repulsion with water?
(A) H_3C_2OH (B) H_3COH (C) C_6H_6 (D) $H_3C - O - CH_3$
- Which one of the following compounds will react with Fehling's solution?
(A) HCOOH (B) $H_3C \cdot CHO$ (C) H_3CCOOH (D) $H_3C - COCH_3$
- Chemical formula of glycine is?
(A) H_3CCOOH (B) $H_3C \cdot CHO$ (C) $H_2N \cdot CH_2COOH$ (D) $H_3C \cdot CO \cdot CH_3$
- Which nitrogenous base is not present in RNA?
(A) Thiamine (B) Cytosine (C) Adenine (D) Uracil
- Which of these polymers is a synthetic polymer?
(A) Animal fat (B) Starch (C) Cellulose (D) Polyester

1279 -- 1219 -- 13000 (3)

SGD-PI-12 19

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1219 (Inter Part-II)

(Session 2015-17 to 2017-19)

Chemistry (Subjective)

Group - I

Paper II

Time Allowed: 2.40 hours

Maximum Marks: 68

SECTION ----- I

2. Answer briefly any EIGHT parts from the followings:- $8 \times 2 = 16$

- (i) Write two properties of covalent hydrides (ii) Define Lanthanides and Actinides.
(iii) Complete and balance the following equations (a) $Li_2CO_3 + heat \rightarrow$ (b) $NaNO_3 + heat \rightarrow$
(iv) Justify that CO_2 is acidic in nature. (v) How Borax is used as water softening agent.
(vi) How H_3BO_3 reacts with (a) C_2H_5OH (b) $NaOH$ (vii) What is aqua regia. How is it dissolves the gold.
(viii) Write chemical Equations showing effect of (ix) How temperature affects the gaseous
temperature on H_3PO_4 Nitrogen di-oxide (NO_2)
(x) Why NH_4NO_3 is not used as fertilizer for paddy rice. (xi) What do you mean by setting of cement.
(xii) What is Biochemical oxygen demand (BOD)

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

- (i) Write down the useful by-products obtained (ii) What is Clemmensen reduction? Give an
in the process of cracking. example.
(iii) Why alkanes are less reactive than alkenes? (iv) Write down the structural formulas of
(a) Naphthalene (b) Phenanthrene
(v) Write down five resonance structures of (vi) Give IUPAC names of the following compounds.
benzene. (a) $(CH_3)_3C-CH_2-Cl$ (b) $(CH_3)_2CHBr$
(vii) What are Grignard's reagents. How are these produced? (viii) How Phenol is prepared by Dow's process?
(ix) How Phenol reacts with formaldehyde? (x) Write down the formulas of
(a) Palmitic acid (b) Iso-Butyric acid
(xi) How can you convert acetic acid into (xii) Write down the mechanism for the reaction
(a) Methane (b) Acetyl chloride between CH_3COOH and NH_3

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

- (i) Complete and balance following equations. (a) $HClO_4 + P_2O_5 \xrightarrow{-10^\circ C}$ (b) $HgO + Br_2 \xrightarrow{50^\circ C}$
(ii) Write order of acid strength of oxyacids of (iii) What happens when bleaching powder reacts with
chlorine. (a) $conc. H_2SO_4$ (b) NH_3
(iv) Give systematic names to following complexes (v) Write industrial method for the preparation of
(a) $K_2[PtCl_6]$ (b) $[Co(NH_3)_4]Cl_3$ formaldehyde.
(vi) What is Cannizzaro's reaction? Give an example. (vii) Define thermoplastic and thermosetting polymers.
(viii) What are polyester resins? Give an example (ix) What is meant by denaturing of proteins.
with reaction equation.

SECTION ----- II

Note: Attempt any three questions from the following.

$(8 \times 3 = 24)$

5. (a) How does the classification of elements in different blocks help in understanding their chemistry
(b) How is sodium metal extracted by Down's cell? Describe the products formed by this cell on
different electrodes by balanced chemical equation.
6. (a) Explain the electrochemical theory for corrosion.
(b) What is smog? Explain the pollutants which are the main causes of photochemical smog.
7. (a) Define Isomerism and explain any two types of structural isomerism with examples.
(b) Discuss the stability of benzene in detail with reference to 1,3,5 - cyclohexatriene.
8. (a) Explain the polymerization of acetylene in detail.
(b) Describe the preparation of ethyl alcohol by fermentation of starch and molasses.
9. (a) How does acetaldehyde react with (i) C_2H_5MgBr (ii) $NaHSO_3$ (iii) NH_2OH (iv) N_2H_4
(b) Write a detailed note on S_N2 reactions of alkyl halides.

SGD-12-G1-19

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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 of these polymers is an addition polymer?
(A) Nylon-6,6 (B) Polystyrene (C) Terylene (D) Epoxy resin
- 2) The reaction between fat and NaOH is called
(A) Esterification (B) Hydrogenolysis (C) Fermentation (D) Saponification
- 3) 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
- 4) Newspaper can be recycled again and again by how many times?
(A) 5 (B) 4 (C) 3 (D) 2
- 5) Mark the correct statement.
(A) Na^+ is smaller than Na atom (B) Na^+ is larger than Na atom (C) Cl^- (ion) is smaller than Cl atom (D) Cl^- (ion) and Cl atom are equal in size
- 6) Which ion will have the maximum value of heat of hydration?
(A) Na^+ (B) Ca^{2+} (C) Ba^{2+} (D) Mg^{2+}
- 7) Tincal is a mineral of
(A) Al (B) B (C) Si (D) C
- 8) Laughing gas is chemically
(A) NO (B) N_2O (C) NO_2 (D) N_2O_4
- 9) Which is the strongest acid?
(A) $HClO$ (B) $HClO_2$ (C) $HClO_3$ (D) $HClO_4$
- 10) The total number of transition elements is
(A) 10 (B) 14 (C) 40 (D) 58
- 11) Ethers show the phenomenon of
(A) Position isomerism (B) Cis-trans isomerism (C) Metamerism (D) Functional group isomerism
- 12) Formula of Chloroform is
(A) CH_3Cl (B) CCl_4 (C) CH_2Cl_2 (D) $CHCl_3$
- 13) Which compound is the most reactive one?
(A) Benzene (B) Ethene (C) Ethane (D) Ethyne
- 14) Grignard's reagent is reactive due to
(A) The presence of halogen atom (B) The presence of Mg atom (C) The polarity of C-Mg bond (D) The polarity of Mg-X bond
- 15) According to Lewis concept ethers behave as
(A) Acid (B) Base (C) Acid as well as base (D) Neutral
- 16) Cannizzaro's reaction is not given by
(A) Formaldehyde (B) Acetaldehyde (C) Benzaldehyde (D) Trimethyl-acetaldehyde
- 17) The solution of which acid is used for the seasoning of food?
(A) Formic acid (B) Acetic acid (C) Benzoic acid (D) Butanoic acid

1281 -- 1219 -- 8500 (4)

SGID-P11-12-19

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1219 (Inter Part - II) (Session 2015-17 to 2017-19)

Chemistry (Subjective)
Time Allowed: 2.40 hours

(Group II)

Paper (II)
Maximum Marks: 68

Section ----- I

2. Answer briefly any Eight parts from the followings:-

8 × 2 = 16

- (i) Why alkali metals give ionic hydrides?
- (ii) Write down similarities of hydrogen with group IVA elements.
- (iii) Give justification for the use of potassium superoxide in breathing equipments of space crafts.
- (iv) Write down the chemical formulae of minerals (a) Kaolin (b) Cryolite
- (v) Write down the effect of heat on Boric acid.
- (vi) How kaolin differs from ordinary clay? (vii) Write two methods of preparation of NO_2
- (viii) How nitrous acid reacts with $CO(NH_2)_2$ and $C_6H_5NH_2$?
- (ix) How Orthophosphoric Acid is prepared on large scale?
- (x) Mention industrial importance of proteins.
- (xi) Write down the names of two enzymes used in the diagnosis of diseases.
- (xii) How carbon monoxide acts as highly poisonous gas?

3. Answer briefly any Eight parts from the followings:-

8 × 2 = 16

- (i) What is vital force theory, why it was rejected.
- (ii) Write structural formulas for the following compounds (a) But-1-ene-3-yne (b) divinyl acetylene
- (iii) What is Raney Nickel. How it is prepared.
- (iv) Write down the formulas of the followings (a) Anthracene (b) Phenanthrene
- (v) How will you prepare 2,4,6-Trinitrotoluene from benzene in two steps.
- (vi) What are primary and tertiary alkyl halides. Give one example each.
- (vii) Write reaction of ethyl magnesium chloride with methanal.
- (viii) Write structural formulas of the following compounds (a) Carboic acid (b) Glycerol
- (ix) How ether is prepared by Williamson synthesis.
- (x) Write structural formulas of the following compounds. (a) Oxalic acid (b) Malonic acid
- (xi) Write any four uses of Acetic acid. (xii) What are amino acids, give their general formula.

4. Answer briefly any Six parts from the followings:-

6 × 2 = 12

- (i) Write any two applications of a noble gas Argon. (ii) Justify that HF is a weaker acid than HCl.
- (iii) What is Teflon. Give its any two uses. (iv) Why transition elements exhibits variable valency.
- (v) Complete the following reactions (a) $Formaldehyde + NaHSO_3 \longrightarrow$ (b) $Acetone + NaHSO_3 \longrightarrow$
- (vi) Write Industrial method for the preparation of formaldehyde.
- (vii) Write any two points of difference between DNA and RNA.
- (viii) What is Glycogen? (ix) Write down difference between polypeptide and protein.

Section ----- II

Note: Attempt any three questions.

(8 × 3 = 24)

5. (a) What are the improvements made in the Mendeleev's periodic table?
(b) What is the function of calcium in plant growth?
6. (a) State the different rules for naming the co-ordination complexes according to IUPAC system?
(b) What is acid rain? How does it affect our environment?
7. (a) Discuss cis-trans isomerism, giving two examples.
(b) Describe the stability of benzene on the basis of heat of hydrogenation.
8. (a) Write down the reaction with mechanism for the preparation of alkene by Kolbe's Electrolytic method.
(b) How methanol is prepared on industrial scale? Why is it called wood spirit?
9. (a) Describe S_N2 mechanism in detail. (b) What is aldol condensation? Discuss its mechanism.

1282 -- 1219 -- 8500

SGD-12-92-19