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SECOND REVISION TEST, JANUARY - 2020
STANDARD - XII

Time : 3.00 hrs

CHEMISTRY

Marks: 70

Instructions:- 1) Check the question paper for fairness of printing. If there is any lack of fairness, inform the Hall Supervisor immediately. 2) Use Blue or Black ink to write and underline and pencil to draw diagrams.

Part - I

Note: i) Answer all the questions. ii) Choose the most appropriate answer from the given four alternatives and write the option code and corresponding answer:-

15×1=15

- 1) Among the following which is not a allotrope of carbon,
a) Beryl b) Fullarene c) diamond d) graphene
- 2) Assertion: bond dissociation energy of fluorine is greater than chlorine gas
Reason: Chlorine has more electronic repulsion than fluorine.
a) Both assertion and reason are true and reason is the correct explanation of assertion
b) Both assertion and reason are true and reason is not the correct explanation of assertion.
c) Assertion is true but reason is false.
d) Both assertion and reason are false.
- 3) The IUPAC name of the complex $[\text{Co}(\text{en})_2(\text{ONO})\text{Cl}]$ is
a) Chlorobis ethylenediaminenitrito cobalt (III) chloride
b) Chloridobis (ethane-1,2-diamine) nitro K-O cobaltate (III) chloride
c) Chloridobis (ethane-1,2-diamine) nitro K-O cobalt (II) chloride
d) Chloridobis (ethane-1,2-diamine) nitroto K-O cobalt (III) chloride
- 4) Which one of the following ions has the number of unpaired electrons as present in V^{2+} ?
a) Ti^{3+} b) Fe^{2+} c) Ni^{2+} d) Cr^{3+}
- 5) In metallurgy, in Ellingham graph T is plotted against _____
a) ΔG° value for the formation of hydride
b) ΔH° value for the formation of hydride
c) ΔG° value for the formation of oxide

- d) ΔH° value for the formation of oxide
- 6) Rate of a reaction is $6 \times 10^{-2} \text{ mol L}^{-1} \text{ S}^{-1}$ and the rate constant for the reaction at 300K is $2 \times 10^{-1} \text{ S}^{-1}$. Then what is the order of the reaction?
 a) 0 b) 1 c) 2 d) 3
- 7) Calculate the radius of an atom which crystallizes in fcc crystal lattice with unit length $4.4 \times 10^{-8} \text{ cm}$.
 a) $1.9 \times 10^{-10} \text{ mm}$ b) $1.9 \times 10^{-10} \text{ pm}$ c) $1.9 \times 10^{-10} \text{ cm}$ d) $1.9 \times 10^{-10} \text{ m}$
- 8) While charging lead storage battery
 a) PbSO_4 on cathode is changed to Pb
 b) PbSO_4 on cathode is changed to PbO_2
 c) PbSO_4 on cathode is changed to Pb
 d) PbSO_4 on cathode is changed to PbO_2
- 9) P^{H} of 0.01M HCl is
 a) 10 b) 1 c) 12 d) 2
- 10) Which is correctly matched?
 a. Emulsion - smoke
 b. Gel - butter
 c. Foam - mist
 d. Whipped cream - sol
- 11) Select the wrong statement:
 a) Analgesics reduce the pain without causing impairment of consciousness.
 b) Antiseptics stop the growth of micro organisms on living tissue.
 c) Antacids remove all acids from stomach
 d) Antifertility drugs suppresses fertilization.
- 12) Glucose does not react with
 a) Schiff's reagent b) Tollen's reagent c) Felling's reagent d) $\text{Br}_2/\text{H}_2\text{O}$
- 13) $\text{C}_2\text{H}_5\text{Br} \xrightarrow[\Delta]{\text{aqNaOH}} \text{A} \xrightarrow{\text{KMnO}_4/\text{H}^+} \text{B} \xrightarrow[\Delta]{\text{NH}_3} \text{C} \xrightarrow{\text{Br}_2/\text{NaOH}} \text{D}$ in this reaction D is
 a) Acetamide b) Methanmine
 c) Bromomethane d) α -Bromo sodium acetate
- 14) Which of the following represents the correct order of acidity.
 a) $\text{CH}_3\text{COOH} > \text{ClCH}_2\text{COOH} > \text{FCH}_2\text{COOH} > \text{BrCH}_2\text{COOH}$
 b) $\text{FCH}_2\text{COOH} > \text{CH}_3\text{COOH} > \text{BrCH}_2\text{COOH} > \text{ClCH}_2\text{COOH}$
 c) $\text{ClCH}_2\text{COOH} > \text{CH}_3\text{COOH} > \text{BrCH}_2\text{COOH} > \text{ICH}_2\text{COOH}$
 d) $\text{FCH}_2\text{COOH} > \text{ClCH}_2\text{COOH} > \text{BrCH}_2\text{COOH} > \text{CH}_3\text{COOH}$

- 15) Sodium methoxide + Butylbromide \rightarrow
a) 2-methyl-2-methoxy propane b) 2-methyl-3-methoxy propane
c) 2-methyl Prop-1-ene d) Methoxy butane

Part - II

Answer any six questions. Q.No. 24 is compulsory:

6×2=12

- 16) Give the uses of silicones.
17) What are interhalogen compounds? Give example.
18) Explain Solvate isomerism with examples.
19) Distinguish crystalline solids and amorphous solids.
20) The rate constant for a first order reaction is $1.54 \times 10^{-2} \text{S}^{-1}$. Calculate its half life time.
21) How can you convert phenol into a) Picric acid and b) Anisole
22) Arrange the following in their increasing order of basic strength
a) NH_3 , CH_3NH_2 , $(\text{CH}_3)_2\text{NH}$, $(\text{CH}_3)_3\text{N}$, (aq.solution)
b) NH_3 , $\text{C}_2\text{H}_5\text{NH}_2$, $(\text{C}_2\text{H}_5)_2\text{NH}$, $(\text{C}_2\text{H}_5)_3\text{N}$, (aq.solution)
23) Write the structure of all possible dipeptides which can be obtained from glycine and alanine.
24) a) CaSO_4 b) Na_3PO_4 c) AlCl_3 .
Among the above which has more precipitate power to precipitate Ferric hydroxide sol. (Positively Charged)

Part - III

Answer any six questions. Q.No. 33 is compulsory:

6×3=18

- 25) Explain froth flotation process. How can you depress ZnS present in galena in concentration of galena in this process.
26) Distinguish lanthanides and actinides.
27) For $[\text{Fe}(\text{H}_2\text{O})_6]^{3+}$ ion the magnitude of octahedral field splitting energy is $14,000 \text{cm}^{-1}$ and the mean pairing energy is $30,000 \text{cm}^{-1}$. Then calculate CFSE for low spin complex of the above complex.
28) Define a) Solubility Product b) Ionic product of water
29) Explain intermediate compound formation theory of catalysis with an example.
30) How Propanoic acid is prepared starting from
a) an alcohol b) CO_2 c) an alkene
31) Write the following reactions:- a) Gomperg reaction
b) Sandmeyer reaction c) Thorpe nitrile condensation
32) Explain the mechanism of cleaning action of soaps.
33) The resistance of 0.15 M solution of an electrolyte is 50Ω . The specific

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conductance of the solution is 2.4 sm^{-1} . The resistance of 0.5 solution of the same electrolyte measured using the same cell is 480Ω . Find the equivalent conductivity of 0.5N solution of the electrolyte

Part - IV

5×5=25

Answer all the questions:-

- 34) a) Describe Mond process for refining nickel. (3)
 b) Explain the equation for the basisty of Boric acid. (2) [or]
 c) Complete the following reactions. (5)
 (i) $\text{Zn} + 2\text{HCl} \rightarrow$ (ii) $\text{SiO}_2 + 4\text{HF} \rightarrow$ (iii) $\text{Xe} + \text{F}_2 \xrightarrow{400^\circ\text{C}/\text{Ni}}$
 (iv) $\text{HCOOH} \xrightarrow{\text{conc. H}_2\text{SO}_4}$ (v) $\text{Cu} + 4\text{HNO}_3 \rightarrow$
- 35) a) Describe the preparation of pottassium dichromate. (3)
 b) Explain the magnet character of $[\text{Ni}(\text{CN})_4]^{2-}$ based on VB theory. (2)
 [or]
 c) Explain Schottky defect (3)
 d) Explain the effect of catalyst and concentration of the reactant on the reaction rate. (2)
- 36) a) Based on Lewis concept classify the following as acid and base.
 i) BeF_2 ii) CH_3OH iii) CO_2 iv) $\text{CH}=\text{CH}$ (2)
 b) Explain any three factors affecting adso:ption. (3) [or]
 c) How can you convert Propane-1-ol to Propane-2-ol (2)
 d) Complete the following reaction:
 i) glycol $\xrightarrow{\text{anhy. ZnCl}_2}$ ii) glycerol $\xrightarrow{\text{KHSO}_4}$
- 37) a) $\text{CH}_3\text{COOH} \xrightarrow{\text{SOCl}_2} \text{A} \xrightarrow{\text{Pd/BaSO}_4} \text{B} \xrightarrow{\text{NaOH}} \text{C}$ (3)
 b) Write the electrolytic reduction reaction of nitro benzene. (2) [or]
 c) How can you confirm the presence of aldehyde and hydroxyl groups present in glucose (2)
 d) Write the reactions for the preparation of i) Buna-S ii) PHBV (3)
- 38) a) Write the expression for the solubility product of $\text{Ca}_3(\text{PO}_4)_2$ (2)
 b) Calculate the standard emf of the cell: $\text{cd}/\text{Cd}^{2+} // \text{cu}^{2+}/\text{cu}$ and determine the cell reaction. $E^\circ \text{Cu}^{2+}/\text{cu} = 0.34//$ and $E^\circ \text{Cd}^{2+}/\text{Cd} = -0.40\text{v}$ (3)
 [or]
 c) Compound 'A' having molecular formula $\text{C}_6\text{H}_6\text{O}$ gives violet colour with natural FeCl_3 . 'A' reacts with NH_3 in the presence of any ZnCl_2 to give compound 'B'. Compound A reacts with CH_3COCl in the presence of NaOH to give compound 'C' compound 'B' reacts with carbon-di-sulphide to give compound 'D'. Identity compounds A, B, C and D and write the reactions. (5)

COMMON SECOND REVISION TEST - 2020

STANDARD - XII

Time : 3 hrs

Chemistry

Marks: 70

Part - I

Note: i) Answer all questions. ii) Choose the correct answer and write the option code and the corresponding answer:

15 x 1 = 15

- Extraction of gold and silver involves leaching with cyanide ion, silver is latter recovered by
a) Distillation b) Zone refining c) liquation d) Displacement with zinc
- Which of the following is not sp^2 hybridised?
a) Graphite b) Dry ice c) Fullerene d) Graphene
- In which of the following NH_3 is not used?
a) Nessler's reagent b) Tollen's reagent
c) Reagent for the analysis of IV group basic radical
d) Reagent for the analysis of III group basic radical
- Which one of the following ions has the same number of unpaired electrons as present in V^{3+} ?
a) Ti^{3+} b) Fe^{3+} c) Ni^{2+} d) Cr^{3+}
- Which one of the following pairs represents linkage isomers?
a) $[Cu(NH_3)_4][PtCl_4]$ and $[Pt(NH_3)_4][CuCl_4]$ b) $[Co(NH_3)_5NO_3]SO_4$ and $[Co(NH_3)_5ONO]SO_4$
c) $[CO(NH_3)_4(NCS)_{22}]Cl$ and $[CO(NH_3)_4(SCN)_2]Cl$ d) both b and c
- The yellow colour in NaCl crystal is due to
a) excitation of electrons in 'F' centres b) reflection of light from Cl^- ion on the surface
c) Reflection of light from Na^+ ion d) all the above
- The addition of a catalys during a chemical reaction alters which of the following quantities?
a) Enthalpy b) Entropy c) Activation energy d) Internal energy
- the aqueous solutions of sodium formate, antinium chloride, and potassium cyanide are respectively
a) acidic, acidic, basic b) basic, acid, basic c) basic, neutral, basic d) none of these
- During electrolysis of molten sodium chloride, the time required to produce 0.1 mole of chlorine gas using a current of 3A is
a) 55 min b) 107.2 min c) 220 min d) 330min
- Which one of the following is correctly matched?
a) Emulsion - smoke
b) Gel - ink
c) Foam - whipped cream
d) Sol - milk
- $(CH_3)_3 - C - CH(OH) - CH_3 \xrightarrow[H_2SO_4]{Con} X$ (Major product)
a) $(CH_3)_3 - C - CH = CH_2$ b) $(CH_3)_2 - C = C - (CH_3)_2$
c) $CH_2 = C(CH_3) - CH_2 - CH_2 - CH_3$ d) $CH_2 = CH - CH_2 - CH_2 - CH_3$
- In which of the following reactions new carbon bond is not formed?
a) Aldol condensation b) Friedel craft reaction
c) Kolbe's reaction d) Wolf Kishner reduction
- $CH_3 - CH_2 - Br \xrightarrow{aq. NaOH} A \xrightarrow{KMnO_4 / H^+} B \xrightarrow{NH_3} C \xrightarrow[NaOH]{Br_2} D$. 'D' is
a) Bromomethane, b) acetamide c) methanamide d) methanamine

14. Which one given below is a non-reducing sugar?
 a) Glucose b) Sucrose c) Maltose d) Lactose
15. Natural rubber has
 a) alternate cis-and trans-configuration b) random cis and trans-configuration
 c) all cis-configuration d) all trans-configuration

Part - II

Note: Answer any 6 questions. Question no. 21 is compulsory. **6 x 2 = 12**

16. What are the various steps involved in extraction of pure metals from their ores?
 17. How will you identify borate radical?
 18. Transition elements exhibit variable oxidation state. Justify your answer.
 19. Give any three characteristics of ionic crystals.
 20. Write note on autocatalyst with example.
 21. Calculate pH of 1.5×10^{-3} M solution of $\text{Ba}(\text{OH})_2$.
 22. Write notes on Claisen ester condensation reaction.
 23. Write notes on mustard oil reaction.
 24. Give two differences between Hormones and vitamins.

Part - III

III. Answer any six questions. Question No. 31 is compulsory. **6 x 3 = 18**

25. Give the basic requirement for vapour phase refining and explain the refining of Nickel.
 26. Complete the following reactions i) $\text{AgNO}_3 + \text{PH}_3 \rightarrow$ ii) $\text{Cu} + \text{H}_2\text{SO}_4 \rightarrow$
 27. In the complex $[\text{Co}(\text{en})_2\text{Cl}_2] \text{Cl}$. Identify the following.
 i) Central metal ion ii) Ligand and their types
 iii) Oxidation number and co-ordination number of central metal ion.
 iv) Geometry and net charge of the complex
 28. Define half life of a reaction. Show that for a first order reaction half life is independent of initial concentration.
 29. Derive an expression for Nernst equation.
 30. Explain how colloids prepared by i) Bredig's arc method ii) Hydrolysis
 31. Compound (A) C_2H_4 undergo hydroxylation using Baeyer's reagent gives 'B'. 'B' reacts with anhydrous ZnCl_2 gives 'C'. Identify A, B and C.
 32. How are the following conversions effected. i) Benzene diazonium chloride to Biphenyl.
 ii) Benzene diazonium chloride to chlorobenzene.
 33. What are biodegradable polymers? Give three example.

Part - IV

Note: Answer all questions: **5 x 5 = 25**

34. a) i) Explain how Cr_2O_3 is reduced to Cr by aluminothermite process? (3)
 ii) Give the uses of SiO_2 silicones. (2) **(OR)**
 b) i) Describe the structure of diborane. (3) ii) Give the uses of helium. (2)
35. a) Explain how potassium dichromate prepared from chromate ore. **(OR)**
 b) i) A solution of $[\text{Ni}(\text{H}_2\text{O})_4]^{2+}$ is green where as a solution of $[\text{Ni}(\text{CN})_4]^{2-}$ is colourless. Explain. (2)
 ii) Explain crystal field splitting in octahedral complexes with diagram. (3)
36. a) i) Calculate percentage efficiency of packing in case of face centred cubic crystals. (3)
 ii) Differentiate order and molecularity of a reaction. (2) **(OR)**
 b) i) Derive Henderson - Hasselbalch equation. (3)
 ii) Write the expression for the solubility product of $\text{Ca}_3(\text{PO}_4)_2$. (2)
37. a) i) Write a note on standard hydrogen electrode (SHE) with neat diagram. (3)
 ii) Explain any three methods of protection of metals from corrosion. (2) **(OR)**
 b) i) Complete the following reactions (3)
 a) $\text{C}_2\text{H}_5\text{OC}_2\text{H}_5 + \text{H}^+/\text{H}_2\text{O} \rightarrow$ b) $\text{C}_2\text{H}_5\text{OC}_2\text{H}_5 + \text{excess of O}_2 \rightarrow$
 ii) Mention the uses of phenol. (2)
38. a) What is Cannizzaro's reaction? Explain with mechanism. **(OR)**
 b) i) Mention any three importance of proteins in biological process. (2)
 ii) How anaesthetics work in our body? How are classified? Give example. (3)

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SECOND REVISION TEST, JANUARY - 2020
STANDARD - XII

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CHEMISTRY

Marks: 70

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Part - I

Note: i) Answer all the questions. ii) Choose the most appropriate answer from the given four alternatives and write the option code and corresponding answer:-

15×1=15

- 1) Among the following which is not a allotrope of carbon,
a) Beryl b) Fullarene c) diamond d) graphene
- 2) Assertion: bond dissociation energy of fluorine is greater than chlorine gas
Reason: Chlorine has more electronic repulsion than fluorine.
a) Both assertion and reason are true and reason is the correct explanation of assertion
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c) Chloridobis (ethane-1,2-diamine) nitro K-O cobalt (II) chloride
d) Chloridobis (ethane-1,2-diamine) nitroto K-O cobalt (III) chloride
- 4) Which one of the following ions has the number of unpaired electrons as present in V^{2+} ?
a) Ti^{3+} b) Fe^{2+} c) Ni^{2+} d) Cr^{3+}
- 5) In metallurgy, in Ellingham graph T is plotted against _____
a) ΔG° value for the formation of hydride
b) ΔH° value for the formation of hydride
c) ΔG° value for the formation of oxide

- d) ΔH° value for the formation of oxide
- 6) Rate of a reaction is $6 \times 10^{-2} \text{ mol L}^{-1} \text{ S}^{-1}$ and the rate constant for the reaction at 300K is $2 \times 10^{-1} \text{ S}^{-1}$. Then what is the order of the reaction?
 a) 0 b) 1 c) 2 d) 3
- 7) Calculate the radius of an atom which crystallizes in fcc crystal lattice with unit length $4.4 \times 10^{-8} \text{ cm}$.
 a) $1.9 \times 10^{-10} \text{ mm}$ b) $1.9 \times 10^{-10} \text{ pm}$ c) $1.9 \times 10^{-10} \text{ cm}$ d) $1.9 \times 10^{-10} \text{ m}$
- 8) While charging lead storage battery
 a) PbSO_4 on cathode is changed to Pb
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- 12) Glucose does not react with
 a) Schiff's reagent b) Tollen's reagent c) Felling's reagent d) $\text{Br}_2/\text{H}_2\text{O}$
- 13) $\text{C}_2\text{H}_5\text{Br} \xrightarrow[\Delta]{\text{aqNaOH}} \text{A} \xrightarrow{\text{KMnO}_4/\text{H}^+} \text{B} \xrightarrow[\Delta]{\text{NH}_3} \text{C} \xrightarrow{\text{Br}_2/\text{NaOH}} \text{D}$ in this reaction D is
 a) Acetamide b) Methanmine
 c) Bromomethane d) α -Bromo sodium acetate
- 14) Which of the following represents the correct order of acidity.
 a) $\text{CH}_3\text{COOH} > \text{ClCH}_2\text{COOH} > \text{FCH}_2\text{COOH} > \text{BrCH}_2\text{COOH}$
 b) $\text{FCH}_2\text{COOH} > \text{CH}_3\text{COOH} > \text{BrCH}_2\text{COOH} > \text{ClCH}_2\text{COOH}$
 c) $\text{ClCH}_2\text{COOH} > \text{CH}_3\text{COOH} > \text{BrCH}_2\text{COOH} > \text{ICH}_2\text{COOH}$
 d) $\text{FCH}_2\text{COOH} > \text{ClCH}_2\text{COOH} > \text{BrCH}_2\text{COOH} > \text{CH}_3\text{COOH}$

- a) 2-methyl-2-methoxy propane b) 2-methyl-3-methoxy propane
 c) 2-methyl Prop-1-ene d) Methoxy butane

Part - II

Answer any six questions. Q.No. 24 is compulsory:

6×2=12

- 16) Give the uses of silicones.
- 17) What are interhalogen compounds? Give example.
- 18) Explain Solvate isomerism with examples.
- 19) Distinguish crystalline solids and amorphous solids.
- 20) The rate constant for a first order reaction is $1.54 \times 10^{-2} \text{S}^{-1}$. Calculate its half life time.
- 21) How can you convert phenol into a) Picric acid and b) Anisole
- 22) Arrange the following in their increasing order of basic strength
 a) NH_3 , CH_3NH_2 , $(\text{CH}_3)_2\text{NH}$, $(\text{CH}_3)_3\text{N}$, (aq.solution)
 b) NH_3 , $\text{C}_2\text{H}_5\text{NH}_2$, $(\text{C}_2\text{H}_5)_2\text{NH}$, $(\text{C}_2\text{H}_5)_3\text{N}$, (aq.solution)
- 23) Write the structure of all possible dipeptides which can be obtained from glycine and alanine.
- 24) a) CaSO_4 b) Na_3PO_4 c) AlCl_3 .

Among the above which has more precipitate power to precipitate Ferric hydroxide sol. (Positively Charged)

Part - III

Answer any six questions. Q.No. 33 is compulsory:

6×3=18

- 25) Explain froth flotation process. How can you depress ZnS present in galena in concentration of galena in this process.
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- 32) Explain the mechanism of cleaning action of soaps.
- 33) The resistance of 0.15 M solution of an electrolyte is 50Ω . The specific

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XII - Chemistry

conductance of the solution is 2.4 sm^{-1} . The resistance of 0.5 solution of the same electrolyte measured using the same cell is 480Ω . Find the equivalent conductivity of 0.5N solution of the electrolyte

Part - IV

5×5=25

Answer all the questions:-

- 34) a) Describe Mond process for refining nickel. (3)
 b) Explain the equation for the basisty of Boric acid. (2) [or]
 c) Complete the following reactions. (5)
 (i) $\text{Zn} + 2\text{HCl} \rightarrow$ (ii) $\text{SiO}_2 + 4\text{HF} \rightarrow$ (iii) $\text{Xe} + \text{F}_2 \xrightarrow{400^\circ\text{C}/\text{Ni}}$
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- 35) a) Describe the preparation of pottassium dichromate. (3)
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- 36) a) Based on Lewis concept classify the following as acid and base.
 i) BeF_2 ii) CH_3OH iii) CO_2 iv) $\text{CH}=\text{CH}$ (2)
 b) Explain any three factors affecting adsorption. (3) [or]
 c) How can you convert Propane-1-ol to Propane-2-ol (2)
 d) Complete the following reaction:
 i) glycol $\xrightarrow{\text{anhy. ZnCl}_2}$ ii) glycerol $\xrightarrow{\text{KHSO}_4}$
- 37) a) $\text{CH}_3\text{COOH} \xrightarrow{\text{SOCl}_2} \text{A} \xrightarrow{\text{Pd/BaSO}_4} \text{B} \xrightarrow{\text{NaOH}} \text{C}$ (3)
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 c) Compound 'A' having molecular formula $\text{C}_6\text{H}_6\text{O}$ gives violet colour with natural FeCl_3 . 'A' reacts with NH_3 in the presence of any ZnCl_2 to give compound 'B'. Compound A reacts with CH_3COCl in the presence of NaOH to give compound 'C' compound 'B' reacts with carbon-di-sulphide to give compound 'D'. Identity compounds A, B, C and D and write the reactions. (5)

FIRST REVISION TEST, JANUARY - 2020

STANDARD - XII

CHEMISTRY

Marks: 70

Time : 3.00 hrs

Part - I

Note:- 1) Answer all the questions. ii) Choose the most suitable answer from the given four alternatives and write the option code and the corresponding answer. $15 \times 1 = 15$

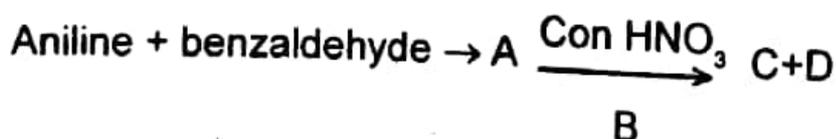
- 1) The metal oxide which cannot be reduced to metal by Carbon is
 a) PbO b) Al_2O_3 c) ZnO d) FeO
- 2) The basic structural unit of silicates is
 a) $(SiO_3)^{2-}$ b) $(SiO_4)^{2-}$ c) $(SiO)^-$ d) $(SiO_4)^{4-}$
- 3) Among the following which is the strongest oxidising agent?
 a) Cl_2 b) F_2 c) Br_2 d) I_2
- 4) How many moles of I_2 are liberated when 1 mole of potassium dichromate react with Potassium iodide?
 a) 1 b) 2 c) 3 d) 4
- 5) Which type of isomerism exhibited by $[Pt(NH_3)_2Cl_2]$?
 a) Co-oxidation isomerism b) Linkage isomerism
 c) Optical isomerism d) Geometrical isomerism
- 6) The vacant space in bcc Lattice unit cell is
 a) 48% b) 23% c) 32% d) 26%
- 7) For a first order reaction, the rate constant is 0.6909 min^{-1} . The time taken for 75% conversion in minutes is
 a) $(3/2) \log 2$ b) $(2/3) \log 2$ c) $(3/2) \log (3/4)$ d) $(2/3) \log (4/3)$
- 8) Dissociation constant of NH_4OH is 1.8×10^{-5} , the hydrolysis const of NH_4Cl would be
 a) 1.8×10^{-19} b) 5.5×10^{-10} c) 5.55×10^{-5} d) 1.80×10^{-5}
- 9) Among the following cells,
 I) Leclanche cells II) Nickel Cadmium cells
 III) Lead Storage battery IV) Mercury cell
 Primary Cells are
 a) I and IV b) I and III c) III and IV d) II and III

- 20) Define equivalent conductance. (^)
- 21) How will you prepare phenol using Dow's process.
- 22) Give the differences between Primary and Secondary structure of Proteins.
- 23) What is therapeutic index?
- 24) Calculate the P^{K_b} of NH_4OH , if the P^H of a buffer solution containing 0.1N NH_4OH and 0.1M NH_4Cl is 9.25.

Part - III

Answer any six questions. Question No.33 is compulsory:- $6 \times 3 = 18$

- 25) Explain Van-Arkel method for refining Zirconium/titanium.
- 26) Write short note on Holme's signal.
- 27) Explain why compounds of Cu^{2+} are coloured but those of Zn^{2+} are colourless
- 28) Aluminium crystallizes in Cubic close packed structure. Its metallic radius is 125 pm. Calculate the edge length of the cell.
- 29) Derive Nernst Equation.
- 30) What is the difference between homogeneous and heterogeneous catalysis.
- 31) How will you convert benzaldehyde into following compounds.
i) benzophenone ii) Benzoic acid iii) α -hydroxy phenol acetic acid
- 32) What are narcotic and non-narcotic drugs. Give examples.
- 33) Identify A, B, C and D.



Part - IV

Answer all the questions:-

- 34) a) i) Write short note on aluminothermic process. $5 \times 5 = 25$
ii) Explain the preparation of Potash atom.
- b) i) How is nitric acid manufactured using Ostwald's process? [or]
ii) What are inner transition elements?

4 XII- Chemistry

a) i) Write the postulates of Werner's theory. [or]
 ii) Write short note on metal deficiency defect.

b) i) Drive an expression for Ostwald's dilution Law.
 ii) State Faraday's Law of electrolysis.

3) a) i) Differentiate Physisorption and Chemisorption [or]
 ii) Write a note on electro osmosis.

b) How are the following conversions effected

i) Phenol \rightarrow P.hydroxy azobenzene ii) Phenol \rightarrow Phenolphthalein

iii) glycol \rightarrow 1, 4 dioxon

37) a) Write short note on,

i) Hoffmann's bromamide reaction ii) Schotten-Baumann Reaction

iii) Combreg reaction. [or]

b) Elucidate the structure of glucose.

38) a) i) In a first order reaction $A \rightarrow$ product 60% of the given sample of A decomposes in 40 min. What is the half-life of the reaction.

ii) A saturated solution, prepared by dissolving $CaF_2(s)$ in water has $[Ca^{2+}] = 3.3 \times 10^{-4} M$. What is the K_{sp} of CaF_2 .

b) An alkene (A) on ozonolysis gives propanone and aldehyde (B). When (B) is oxidised (C) is obtained. (C) is treated with Br_2/P gives (D). Which on hydrolysis gives (E). When propanone is treated with HCN followed by hydrolysis gives (E). Identify A, B, C, D and E.

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FIRST REVISION EXAMINATION 2019-20

Time Allowed : 3.00 Hours]

CHEMISTRY

Max. Marks : 70

PART - I

15 x 1 = 15

Note : i) Answer all the questions

- The shape of XeOF_4 is
(a) T-Shape (b) Pyramid (c) Square planar (d) Square pyramid
- The fraction of total volume occupied by the atoms in a fcc is ----
(a) $\frac{\pi}{6}$ (b) $\frac{\pi}{3\sqrt{2}}$ (c) $\frac{\pi}{4}$ (d) $\frac{\sqrt{3}\pi}{8}$
- During electrolysis of molten CuCl_2 , the time required to produce 0.2 mole of chlorine gas using a current of 2A is?
(a) 32.66 min (b) 321.66 min (c) 378 min (d) 260 min
- Aniline + benzoyl chloride $\xrightarrow{\text{NaOH}}$ $\text{C}_6\text{H}_5 - \text{NH} - \text{COC}_6\text{H}_5$ this reaction is known as ----
(a) Friedel - Crafts reaction (b) HVZ reaction
(c) Cannizzaro reaction (d) Scotten Baumann reaction
- The pyrimidine base present in DNA is
(a) Cytosine & Adinine (b) Cytosine & Guanine
(c) Cytosine & Thiamine (d) Cytosine & Uracil
- The drug used to induce sleep is
(a) Paracetamol (b) bithional (c) equanil (d) Chloroquine
- Match the following**

A) V_2O_5	i) High density polyethylene
B) Ziegler - Natta	ii) PAN
C) Peroxide	iii) NH_3
D) Finely divided Fe	iv) H_2SO_4

A	B	C	D
a) iv	i	ii	iii
b) i	i	iv	iii
c) ii	iii	iv	i
d) iii	iv	ii	i
- Number of secondary alcohol group present in glycerol is -----
(a) 1 (b) 2 (c) 3 (d) 4
- Assertion : 2,2 - dimethyl propanoic acid does not give HVZ reaction.
Reason : 2,2 - dimethyl propanoic acid does not have a α - hydrogen atom.
a) both assertion and reason are true and reason is the correct explanation of assertion.
b) both assertion and reason are true but reason is not the correct explanation of assertion.
c) assertion is true but reason is false.
d) both assertion and reason are false.
- Cupellation is the process of used for the refining of ----
(a) Ag (b) Pb (c) Cu (d) Fe
- The hybridization of carbon in C_{60} fullerene is ----
(a) SP^3 (b) SP (c) SP^2 (d) Partial - SP^2 Partial - SP^3
- If 75% of a first order reaction was completed in 32 minutes, 50% of the same reaction under the same conditions would be completed in
(a) 4 min (b) 8 min (c) 16 min (d) 32 min
- Which one of the following is paramagnetic?
(a) $[\text{Zn}(\text{NH}_3)_4]^{2+}$ (b) $[\text{Co}(\text{NH}_3)_6]^{3+}$ (c) $[\text{Ni}(\text{H}_2\text{O})_6]^{2+}$ (d) $[\text{Ni}(\text{CN})_4]^{2-}$
- H_2PO_4^- the conjugate base of ----
(a) PO_4^{3-} (b) P_2O_5 (c) H_3PO_4 (d) HPO_4^{2-}
- The actinoid element which show the highest oxidation state of +7 is
(a) NP, Pu, Am (b) U, Fm, Th (c) U, Th, Md (d) Es, No, Lr

PART - II

Answer any six questions and question No. 24 is compulsory.

6x2=12

- How will you identify borate salt?
- What about bleaching nature of chlorine?
- Why Cr^{2+} is strongly reducing while Mn^{3+} is strongly oxidizing? Explain.

V / 12 / Che / 1

