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MOUNT CARMEL MISSION MATRICULATION HIGHER SECONDARY SCHOOL

Mount Road, Carmel Nagar, Kallakurichi – 606 202

+2 CHEMISTRY COLLECTION OF

QUESTION PAPER

UNIT WISE

MOUNT CARMEL MISSION MAT. HR. SEC. SCHOOL, KALLAKURICHI.

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2019-2020

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1.METALLURGY
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1.What is the role of the depressing agent in froath floatation process? In .p.no:4 ****

2.What is the role of graphite rods in the electrometallurgy of aluminium.see pta q/a

3.Explain the terms with suitable example.

a)Gangue b)Slage (B/B-11)

4.Describe the underlying principle of froth floatation process.(B/B-4) ****

5.Describe the method for refining of nickel.(B/B-6)

6.Define the following terms i)Roasting ii)Calcination (In.p.no:6,7) ****

7.Mention any two uses of zinc(B/B-9).

8. Explain the electrolytic refining of sliver. see pta q/a

9.Explain extraction of copper from copper pyrites?(In.P.NO:8)

10.CO is reducing agent. Justify with an example. see pta q/a

11.Write short notes on zone refining process.(In.P.NO:16) ****

12.Out of Coke and CO , which is the better reducing agent for the reduction of ZnO ? why ? B/B-5

13.Explain the electro metallurgy of aluminium. (B/B-10) ****

14.Explain how gold ore is leached by cynide process B/B-5

15. Explain the electro metallurgy of aluminium. (B/B-10)

16. How Cr_2O_3 IS reduced to Cr by Al powder? IN.P.NO-9

BOOK –BACK QUESTIONS:

1.Differentiate between minerals and ore.(B/B-1) ****

2. What is the role of limestone in the extraction of iron from its oxide Fe_2O_3 ? (B/B-3)

3.Explain the principle of electrolytic refining with

an example.(B/B-14)

4. The selection of reducing agent depends on the thermodynamics factor. Explain with an example (B/B-15)

5.In the extraction of metal ore is first converted into metal oxide before reduction into metal why ? (crt)

6. Write a note on thermodynamic principle of metallurgy. (In.p.no : 10)

7. Give the basis requirement for vapour phase refining(B/B-12) ****

8. Give the limitation of elingham diagram. (B/B-16) ****

9. What are the various steps involved in extraction of pure metals from their ores ? (B/B-2)

10. Describe a suitable method for refining nickel. (B/B-6)

11. Descripe the role of the following in the process mentioned

I). Cryolite in the extraction of aluminium (B/B-13-II)

ii) Iodine in the refining og zirconium(B/B-13-III)

 12. Explain the electro metallurgy of aluminium. (B/B-10)

 13.Out of coke and CO, which is better reducing agent for the reduction of ZnO ? (B/B-5)

14.In the metallurgy roasting of ore is done below its melting points whereas smelting is done above its melting point. Why ? (crt)

15.Name the collector and depressing agent used in froth flotation process. (In.P.NO-4)

16.Explain van-Arkel method for refining zirconium/titanium (In.P.NO-17)

17.write short note on alumino thermic process. (B/B-10)

18.Write the condition for the following using elingham diagram.

 i)Reduction of magnesia by aluminium. (B/B-8)

ii) Is it possible to reduce Fe_2O_3 using carbon. (B/B-8)

19.Describe the role of the following in the process mentioned

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 i)Silica in the extraction of copper (B/B-13-I)

 20.Explain froth flotation process. How can you depress ZnS Present in galena in concentration of galena in this process.(B/B-4) ****

21.The selection of reducing agent depends on the thermodynamic factor .Explain with example?L.NO:1(B/B-15)

BOOK-INSIDE QUESTIONS:

1. Explain zone refining process with an example (In. P.NO:16)

2. Explain about cynide leaching .(In.P.NO:4)

3.What is auto reduction ?(In.P.NO:10) ****

4. Write notes on calcination with an example. (In.P.NO:7) ****

5. Explain refining of i) titanium by van-arkel method ii) nickel by mond's process. (In.P.NO:16,17) ****

6.What is meant by roasting ? give one example .(In.P.NO:6)

7. Write notes on blister copper. (In.P.NO-9)

8. Write the uses of iron and zinc (In.P.NO-17,18)

9. What is called smelting ? How is copper extracted from its ore by this method ? (In.P.NO-8)

10. Oxide like Ag_2O and Hg_2O undergo self reduction. Why ?

 11.What are the main observation of Elingham diagram? (In.P.NO-12) ****

12. In metallurgy roasting of ore is done below its melting points whereas smelting is done above its melting pont. Why ? (In.P.NO-)

13.Explain how gold ore is leached by cyanide process. (In.P.NO-4).Q.NO:4

14. Write a notes on alkali leaching process. (In.P.NO-5)

15. Explain concentration by magnetic separation with diagram. (In.P.NO-6) ****

16.What is Elingham diagram. (In.P.NO-12)

17.What is meant by concentration. (In.P.NO-3)

18. What is the role of sodium cyanide in froth floation. (In.P.NO-4)

19.List out the application of aluminium. (In.P.NO-17)

20.Explain how Cr_2O_3 is reduced to cr by aluminothermic process. (In.P.NO- 9)

21. Describe mond process for refining nickel. (In.P.NO-16)

2.p-block-I

PTA – QUESTIONS :

1.A hydride of 2nd period alkali metal (X) on reaction with compound of Boron (Y) to give a reducing agent (Z).Identify x,y and Z.(B/B-18)

2.What is known as inorganic benzene ? how it is prepared ? (In.P.NO-37) ****

3. Write a note on zeolites. (B/B-16) ****

4. How will you N convert boric acid into boron nitride. (B/B-17)

5. Complete the reaction $P_4 + NaOH + H_2O \rightarrow$? IN.P.NO-68

6. Write note on the structure of diborane. (B/B-10) ****

7. Write a note on Fisher tropsch synthesis(B/B-6) ****

8.How is potash Alum prepared? (In.P.NO-40) ****

9.What is water gas equilibrium ? (In.P.NO-45)

10. How will you identify borate radical ? Write the reaction involved. (B/B-15) ****

11.What are amphiboles? Give example. (In.P.NO-49)

12.$AlCl_3$ is more stable where as $TiCl_3$ is highly unstable. Why ? see pta q/a

13.Explain the classification of inosilicates. in. p. no 49 ****

14..How are the silicones prepared? (B/B-47) ****

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BOOK –BACK QUESTIONS:

1.write a short note on anamolous properties of the first elements of each group of p-block. (B/B-1)

2.Write the uses of silicones. (B/B-8) ****

3.Write a note on Fisher tropsch synthesis. (B/B-6) ****

4.$AlCl_3$ behave like lewis acid. Substantiate this statement. (B/B-9)

5.Comlete the following reaction.

i) $Na_2B_2O_7 + H_2SO_4 + H_2O \rightarrow$? (B/B-14-b)

ii) $SiCl_4 + NH_3 \rightarrow$? (B/B-14-g)

6.Describe the structure of diborane. (B/B-10) ****

7.Complete the following.

i) $B + NaOH$ ii) $B_2H_6 + CH_3OH$ iii) $HCOOH + H_2SO_4$ (B/B-14)

8.Write a note on zeolites.write its general formula ? (B/B-16)

9.Draw the structure of CO and CO_2 (B/B-7) ****

10.How will you identify borate radical ? (B/B-15) ****

11.Complete the following reaction (B/B-14)

i) $H_2B_4O_7 \rightarrow$?

ii) $SiCl_4 + NH_3 \rightarrow$?

12. Give any two uses of borax. (B/B-4) ****

13.How will you convert boric acid into boron nitride. (B/B-17)

14.Write a short note on hydroboration. (B/B-11) ****

15.Write a note on metallic nature of P-block elements. (B/B-13)

17.Sodium borohydride reacts with iodine in the presence of diglyme to give (A) .(A) heated at 388K give (B). (A) heated at 373K in sealed tube to from (C).(A) further heated at red hot condition to give element(D). Find out A,B and C ,give the reaction.

BOOK-INSIDE QUESTIONS:

1.What is the action of heat on boric acid . (In.P.NO-34)

2**.**complete the following reaction

 $B_2H_6 + NH_3 \rightarrow$? (In.P.NO-37)

3. How is diborne prepared ? (In.P.NO-36) ****

4.How will you prepare inorganic benzene ? (In.P.NO-37) ****

5. Give an example for the following bonds containing molecules.

a) 2c -2e bond b) 3c – 2e c) 3c – 4e(In.P.NO-37)

6.How is borax extracted from colemanite ? (In.P.NO-33) ****

7. Write the preparation of potash alum. (In.P.NO-40) ****

8. Although graphite and diamond are allotropes of carbon , graphite is soft whereas diamond is hard. Why ? (In.P.NO-42

9.Mention the uses of potash alum. (In.P.NO-40) ****

10.Explain the classification of inosilicates. (In.P.NO-49)

11. Why boron compounds are covalent in nature ?

12. mention the uses of carbon monoxide (In.P.NO-44)

13.Distinguish graphite from diamond (In.P.NO-41)

14 . How do you prepare $AlCl_3$ by Me-Afee process. (In.P.NO-39)

15 .Explain the equation for the basisty of boric acid . (In.P.NO-34)

16 . Draw the structure of inorganic benzene and diborane .IN.P.NO :37 ****

17.How will silicate classified ? Give an example for each type of   silicate ?L.NO:2 (In.P.NO-48) ****

3.p-BLOCK ELEMENTS-II

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PTA – QUESTIONS :

1. Why fluorine is more reactive than other halogens. (B/B-6) ****
2. Explain the dehydrating property of sulphuric acid (B/B-12) with suitable example. (In.P.NO-78) ****
3. Give two uses of Helium and argon. (B/B-7&15) ****
4. What is the hybridation in $XeOF_2$? Give its structure. (In.P.NO-93)
5. How will you prepare chlorine in the laboratory ? (B/B-10) ****
6. Mention the characteristics of interhalogen compounds. (B/B-5)
7. Write the structure and basicity of following oxy acids (In.P.NO-72)
   i) hypo phosphoric acid ii) ortho phosphoric acid
   iii) pyro phosphoric acid
8. Give reasons : ICl is more reactive than I_2 see pta q/a
9. Nitrogen does not fom any penta halides like phosphorus.Why? see pta q/a
10. What type of hybridization on occurs in the following compounds.
    a)BrF_5 b)IF_7(In.P.NO-90)
11. List any five compounds of xenon andmention the type of hybridisation and structure of the compounds.
    (In.P.NO-93) Table3.7(model)
12. What is the reaction of ammonia with iron and copper salts ? see pta q/a
13. Ozone (O_3) act as a powerful oxidizing agent. (In.P.NO-75).
14. How is pure phosphine prepared from phosphorous acid ? in.p.no :69
15. .What are inter halogens compounds ?.Give example (B/B-5) ****
16. What is the reaction of ammonia with iron and copper salt? see pta q/a

BOOK –BACK QUESTIONS:

1. Complete the following
   i) $AgNO_3 + PH_3 \rightarrow$? (B/B-23-6)
   ii) $Xe + F_2$ $\underline{NI/200atm\ 400^0\,C}$ $\rightarrow$? (B/B-23-15)
   iii) H_3PO_3 heat$\rightarrow$ in. p. no :69
   iv) $sb + Cl_2 \rightarrow$? (B/B-23-x)
   v) $Cu + H_2SO_4 \rightarrow$? (B/B-23-ix)
2. Why is Flurine more reactive than other halogens ? (B/B-6) ****
3. What are inter halogens compounds ? mention their properties . (B/B-5) ****
5. Give two uses of Helium. (B/B-7)
6. what is inert pair effect ? (B/B-1) ****
7. How is nitric acid manufacture using oswald'd process? in. p. no : 61
8. Two uses of phosphane. IN.P.NO :70****
9. Give the reason for anomalous nature of nitrogen. (B/B-13)
10. How will you prepare chlorine in the laboratory ? (B/B-10) ****
11. What happens when PCl_5 is heated? (B/B-19)

BOOK-INSIDE QUESTIONS:

1. Write the deacon's process for the manufacture of chlorine. (In.P.NO-83)
2. How will you prepare chlorine from bleaching powder ? (In.P.NO-83)
3. Explain the commercial method of preparation of nitric acid ? (In.P.NO-61) ****
4. What type of hybridisation occur in the following compounds ?
   a) BrF_5 b) BrF_3
5. Write short notes on holme's signal ? (In.P.NO-70) ****

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6. why HF is not stored in glass bottles ? (In.P.NO-88) ****

7. What is royal water ? what is its use ? (In.P.NO-86)

8.Explain the dehydrating property of sulphuric acid with suitable example (In.P.NO-78) ****

9.Explain the bleaching action and oxidizing nature of chlorine with suitable example . (In.P.NO-85)

10.Draw the structure for i) H_2SO_4 (In.P.NO-80) ii)HNO_3(In.P.NO-66) iii)H_3PO_4(In.P.NO-72)

11.complete the following reactions.

i) $Zn + 2HCl \rightarrow$? (In.P.NO-86) ii) $SiO_2 + 4HF \rightarrow$? (In.P.NO-88)

4.TRANSITION AND INNER TRANTION ELEMENTS

PTA – QUESTIONS :

1.What are interstitial compounds ? How they differ from the properties of its pure metals ? (B/B-11) ****

2. Justify the position of lanthanide and actinide in the periodic table. (B/B-4)

3. Out of $Lu(OH)_3$ and $La(OH)_3$ which is more basic and why ? (B/B-21) ****

4. Describe the preparation of $KMnO_4$. (In.P.NO-115) ****

5.What is lanthanide contraction ? Mention its consequences. (B/B-9) ****

6. Write the any five difference between Lanthanide and Actinide (B/B-17) ****

7.What are transition elements ? (B/B-1) write two characteristics of the transition elements ?

8.Why transition elements shows variable oxidation state? (In.P.NO-106) ****

9. complete the following reaction

   i).$2MnO_2 + 4KOH + O_2 \rightarrow$? (In.P.NO-115)

   ii) $Cr_2O_7^{2-} + 14H^+ + 6I^- \rightarrow$? (In.P.NO-114)

10.Why do transition elements and its compound act as catalyst? (In.P.NO-110)

11.Explain why Cr^{3+} is strongly reducing while Mn^{3+} is strongly oxidizing. (B/B-18)

12.Transition metals show high melting points why? (B/B-30) ****

13.Calculate the number of unpaired electrons in Ti^{3+}, Mn^{2+} and calculate the spin only magnatic moments? (B/B-12) ****

14.Describe the preparation of potassium dichromate (B/B-8). ****

15. .Write a short note on chromyl chloride test. (In.P.NO-114) ****

BOOK –BACK QUESTIONS:

1.What are the consequences of lanthanides (B/B-9) ****

2.Compare the properties of lanthanides and actinides. (B/B-17) ****

3.Transition metals posses high melting points. Why ?(B/B-30)

4.Why is Gd^{3+} ion colourless ? (B/B-6) ****

5.Which is more stable among Fe^{3+} and Fe^{2+} ? why ? (B/B-15)

6.Why do d-block elements readily form coordination compounds ? IN.P.NO :112

7. Explain why compounds of cu^{2+} are coloured but those of Zn^{2+} are colourless. (B/B-7) ****

8.What are inner transition elements? (B/B-3)

9.Out of $Lu(OH)_3$ and $La(OH)_3$ which is more basic and why ? (B/B-21) ****

10.What is meant by transition elements ? (B/B-1)

11.Write the preparation of $K_2Cr_2O_7$. (B/B-8) ****

12.What are interstitial compounds ? (B/B-11)

13.Describe the variable oxidation state of 3d series elements. (B/B-27) ****

14.why first ionization enthalpy of chromium is lower than that of zinc ? (B/B-29)

15.Which is a stronger reducing agent Cr^{2+} or Fe^{2+}? (B/B-24)

.BOOK-INSIDE QUESTIONS:

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1.what is zeiglar-Nata catalyst ? in which reaction it is used ? give equation. (In.P.NO-111) ****

2 .Write a short note on chromyl chloride test. (In.P.NO-114) ****

3. Why transition elements form complexs ? (In.P.NO-112) ****

4. Mention the new properties that occur in interstitial compounds. (In.P.NO-111)

5. Mention the uses of potassium permanganate. (In.P.NO-118)

6. Calculate the equivalent weight of $KMnO_4$ In the following reactions. (In.P.NO-118)

a) $MnO_4 + 2H_2O + 3e^- \rightarrow MnO_2 + 4OH^-$

b) $2MnO_4 + 10Fe^{2+} + 16H^+ \rightarrow 2Mn^{2+} + 10Fe^{3+} + 8H_2O$

7. Transiton elements exhibit variable oxidation state . justify your answer. (In.P.NO-106) ****

5.COORDITION CHEMISTRY

PTA –QUESTIONS :

1.What is crystal field splitting energy ? (B/B-23)
****

2.Mention the main assumption of valence bond theory coordination compounds. (In.P.NO-147)

3.$[Fe(CN)_6]^{4-}$ and $[Fe(H_2O)_6]^{2+}$ are of different colours in dilute solutions.Why? see pta q/a ****

4.What will be the correct order for the wave lengths of absorption in the visible region and explain for the following

$[Ni(NO_2)_6]^{4-}$,$[Ni(NH_3)_6]^{2+}$, $[Ni(H_2O)_6]^{2+}$.   see pta q/a

5.Write the IUPAC Name for the compound Na_2 [Ni(EDTA)].(B/B-1(1))

6. what is linkage isomerism . explain with an example. (B/B-14) ****

7. Give the one test to differentiate compounds $[Co(NH_3)_5 Cl]SO_4$ and $[Co(NH_3)_5 SO_4]$ Cl. (B/B-12) ****

8. $[Ti(H_2O)_6]^{3+}$-is coloured while $[Sc(H_2O)_6]^{3+}$ is colourless .Explain. (B/B-10) ****

9.What are the inert and labile complexes? (In.P.NO-163)

10.What is stability constant? Mention its significance . (In.P.NO-163)

11.In tetrahedral field ,draw the figure to show spiliting of d-orbitals(In.P.NO-155). ****

12.How double salt differs from co-ordination compounds? (B/B-17) ****

13. a) For the complex $[Fe(en)_2 cl_2]$ Cl_2.identify. see pta q/a

        1)Oxidation number of Fe

        2)Hybridisation and shape

        3)Magnetic behaviour

        4)Number of geometric isomers.

        5)Whether there may be optical isomers also?

        6)IUPAC name

14.i) Write any two medicinal uses of co-ordination compounds. (In.P.NO-166)

ii)What are hydrate isomers? Explain with example.(B/B-22) ****

15.Explain the bonding nature in metal carbonyl. B/B-26 ****

16.What are ionisation isomers ? Explain with an example   **** IN.P.NO:142

17. Explain $[Fe(CN)_6]^{3-}$ is paramagnetic, using Crystal Field theory . (In. P.NO:158)

BOOK –BACK QUESTIONS:

1.Write the IUPAC names for the following complexes.(B/B-1) ****

 i) $[Co(ONO)(NH_3)_5]^{2+}$ ii) Na_2 [Ni(EDTA)]

iii) [Co (en)$_3$]$_2$ (SO$_4$)$_3$ iv) [Pt(NH$_3$)$_2$ cl.NO$_2$]

2. What are the limitation of VB theory ? (B/B-29) ****

3.Give the one test to differentiate compounds $[Co(NH_3)_5 Cl]SO_4$ and $[Co(NH_3)_5 SO_4]$Cl (B/B-12)

4.Explain the werner's theory of coordination compounds. (B/B-18) ****

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5.Write the oxidation state, coordination number and IUPAC name of $[Co(ONO)(NH_3)_5]^{2+}$

6.What is crystal field splitting energy OR CFSE? (B/B-23)

7.In the complex $[Co(C_2O_4)_3]^{3-}$, mention the i) Hybridation, ii) Nature of ligand iii) Geometry(B/B-28)

8.Arrange the following ligands in the ascending order on the basis of crystal field splitting power H_2O, CO, Br^-, CN^-

9. what is linkage isomerism . explain with an example. (B/B-14) ****

10.Give the difference between double salts and coordination compounds ? (B/B-17)

11.Mention the type of magnetic property of the following complexes using theory $[Cr(NH_3)_6]^{3+}$ and $[Ni(CN)_4]^{2-}$. (B/B-8)

12.What are hydrate isomers ? Explain with an example . (B/B-22)

13.In the complex $[Co(en)_2Cl_2]Cl$. identify the following. (CRT)

i)central metal ion ii) Ligand and their types

iii)oxidation number and co-oridation number of central metal ion.

iv)Geometry and net charge of the complex.

14.Explain crystal field splitting in octahedral complexes with diagram. (B/B-13) ****

15.A solution of $[Ni(H_2O)_4]^{2+}$ is green. Where as a solution of is $[Ni(CN)_4]^{2-}$ colourless. Explain.(B/B-25)

BOOK-INSIDE QUESTIONS:

1. Write the postulates of Crystal field theoy. (In. P.NO:153) ****

2. Discuss the magnetic property, hybridation, shape for the complex $[CoF_6]^{3-}$ by applying valence bond theory. (In. P.NO:151)

3. Write the salient feature of CFT. (In. P.NO:153)

4. What are ionisation isomers ? Explain with an example. (In. P.NO:142)

5. Explain $[Fe(CN)_6]^{3-}$ is paramagnetic, using Crystal Field theory . (In. P.NO:158)

6. The mean pairing energy and octahedral field splitting energy of $[Mn(CN)_6]^{3-}$ are 28,000 cm^{-1} and 38,500 cm^{-1} respectively. Whether this complex is stable in low spin or high spin ? (In. P.NO:160) ****

7. Write note on Co-ordination isomerism. (In. P.NO:142)

8. For $[Fe(H_2O)_6]^{6+}$ ion the magnitude of octahedral field splitting energy is 14,000cm^{-1} and the mean pairing energy is 30,000cm^{-1} .Then calculate CFSE for law spin complex of the above complex. (In. P.NO:157).

9. What is coordination number .(In. P.NO:134)

6.SOLID STATE

PTA – QUESTIONS :

1.Differentiate between crystalline solid and amorphous solid.(B/B-3) ****

2.Atoms X and Y form BCC crystalline structure. Atom X is present at the corners of the cube and Y is at the centre of the cube . what is the formula of the compound . (B/B-23)

3. calculate the percentage efficiency of packing in case of body centered cubic crystal. (B/B-14) ****

4.Explain 'f' centers with a neat diagram. (In.p.no:194) ****

5.Outline the classification of point defects. (In.p.no:193)

6.What is bragg's equation? (In.p.no:184) ****

7.What is radius ratio in ionic solid ? Tabulate the relation between radius ratio and structural arrangement in ionic solid. (In.p.no:192)

8.Explain Frenkel defect. (B/B-25) ****

9.What are the characteristics of Ionic solids? (B/B-2) ****

10.Sketch Face centred cubic unit cell (FCC) and calculatethe number of atoms present in it. (B/B-11)

11.What is packing efficiency?(In.p.no:187)

12.Define the terms crystal lattice and unit cell. (B/B-1) ****

13.An atom crystallizes in FCC crystal lattice and has a density of $10 gcm^{-3}$ with unit cell edge length of 100pm. Calculate the number of atoms present in 1 g ofcrystal. (B/B-22)

14. A face centred cubic solid of an element (atom mass 60) has a cube edge of $4A^0$. Calculate its density. (In.p.no:186)

15. Explain schottky defect . (B/B-9) ****

BOOK –BACK QUESTIONS:

1.Calculate the percentages efficiency of packing in simple cubic crystal ? (IN.P.NO :-187)

2.Distinguish between hexagonal close packing and cubic close packing . (B/B-6) ****

3.calculate the percentage efficiency of packing in case of body centered cubic crystal. (B/B-14)

4.An atom crystallizes in fcc crystal lattice and has a density of $10 gm^{-3}$ with unit cell edge length of 100 pm. Calculate the number of atoms present in 1 g of crystal. (B/B-22)

5.Experiment shows that Nickel oxide has the formula $Ni_{0.96}O_{1.00}$. What faction of Nickel exists as of Ni^{2+} and Ni^{3+} ions ? (B/B-16)

6.If NaCl is loped with 10^{-2} mol of strontium chloride , what is the concentration of cation valency. (B/B-20)

7.Explain schottky defect . (B/B-9) ****

8.Calculate the number of atoms in a fcc unit cell. (B/B-11) ****

9.Explain briefly seven types of unit cell. (B/B-5)

10.What is meant by coordination number. (B/B-17)

11.Aluminium crystalizes in a cubic close packed structure . its metallic radius is 125 pm .calculate the edge length of unit cell. (B/B-19)

12.Explain Frenkel defect. (B/B-25)

13.Write any three difference between tetrahedral and Octahedral voids. (B/B-7) ****

14.Atom 'X' is present at the corners of the cube and atom 'Y' is at the centre of the cube in bcc crystalline structure . What is the formula of the compound . (B/B-23)

15.Define unit cell . (B/B-1) ****

16.Explain metal deficiency defect with example. (B/B-10)

17.Write the properties of ionic crystal (B/B-2)

18.Differentiate between crystalline solid and amorphous solid. (B/B-3) ****

19.Sodium metals crystallizes in BCC structure with edge length of the unit cell 4.3 $x10^{-8}$ cm. Calculate the radius of sodium atom. (B/B-24)

20.Mention the types of crystals for the following(CRT)

i)Antharacene ii) glucose iii) brass iv) SiC

21.The composition of a sample wurtzite is $Fe_{0.93} o_{1.00}$ calculate the percentage of ions present in the form of Fe^{3+}.

22.Explain AAAA and ABABA and ABABC type of three dimensional packing with the help of neat diagram? (B/B-12)

BOOK-INSIDE QUESTIONS:

1. sustantiate with suitable reason ZnO is colourless at room temperature and on heating it turns to yellow colour ? (In.p.no:195)

2. State Bragg's equation.explain it terms . (In.p.no:184)

3. What are called primitive and non-primitive unit cells ? (In.p.no:181)

4. A face centred cubic solid of an element (atom mass 60) has a cube edge of $4A^0$. Calculate its density. (In.p.no:186)

5. Calculate the packing efficiency of fcc. (In.p.no:192) ****

6. How are point defect classified ? (In.p.no:193)

7. Define packing efficiency. (In.p.no:187)

8. Barium has a body centred cubic unit cell with a length of 508 pm along an edge . what is density of barium in g cm^{-1}. (In.P.NO:185)

9. Classify molecular crystal with an example for each type. (In.P.NO:179) ****

7.CHEMICAL KINETICS

PTA – QUESTIONS :

1.write any three differences between order of a reaction and molecularity of a reaction. (B/B-5)

2.Derive arrhenius equation to calculate activation energy from the rate constant $K_1$and K_2 at temperature T_1 and T_2 respectively. (In.P.NO:220)

3.Derive integrated rate law for a first order reaction A $\rightarrow$ product. (B/B-7) ****

4.The rate of formation of dimer in a second order reaction is 7.5 x 10^{-3} mol L^{-1} s^{-1} at 0.05 mol L^{-1} monomer concentration .Calculate the rate constant. (B/B-11)

5.Mention the factors affecting the rate of the reaction. (In.P.NO:222)

6. Differentiate rate of reaction and rate constant of the reaction. (In.P.NO:209) ****

7.Calculate the half life period of a zero order reaction. (In.P.NO:216)

8.Explain the rate determininig step with an example. (B/B-6)

9.Define half life period of reaction. show that for a first order half life is independent of initial concentration. (B/B-4)

10.The constant for a first order reaction is 1.54x10^{-3} S^{-1} Calculate its half life time. (B/B-23) ****

11.What is zero order reaction ? Derive rate law for zero order reaction? (B/B-3) ****

  12.What is pseudo first order reaction? Give an example. (B/B-17) ****

13. A first order reaction is 40% complete in 50 minutes. Calculate the value of the rate constant . In what time will the reaction be 80% complete ? (B/B-30)

BOOK –BACK QUESTIONS:

1.How does the rate of a reaction vary with temperature ?

2. Write Arrhenius equation and explain the terms involved. (B/B-14) ****

3.Derive integrated rate law for a zero order reaction A$\rightarrow$ product. (B/B-3)

4.The rate of formation of a dimer in a second order reaction is 7.5 x 10^{-3} mol L^{-1} s^{-1} at 0.05 mol L^{-1} monomer concentration . Calculate the rate constant. (B/B-11)

5.Define average rate and instantaneous rate . (B/B-1)

6.What is elementary reaction ? Give the difference between order and molecularity of a reaction . (B/B-5) ****

7.Explain briefly the collision theory of bimolecular

reactions. (B/B-13)

8.Consider the decomposition of N_2O_5 to form NO_2 and O_2 at a particular instant N_2O_5 disappears at a rate of 2.5 x 10^{-2} mol dm^{-3} S^{-1} . At what rate are NO_2 and O_2 formed ? what is the rate of the reaction ? (B/B-6)

9.Explain the rate determing step with an example. (B/B-9)

10.How do concentration of the reactant influence the rate of reaction. (B/B-21).

11.For a reaction x + y + z $\rightarrow$ product the rate = $k[x]^{3/2}[y]^{1/2}$. what is the overall order of the reaction and what is the order of the reaction with respect to z ? (B/B-12)

12.Write the rate law for the following reactions : (B/B-8)

a) A reaction that is 3/2 order in x and zero in y.

b) A reaction that is second order in NO and first orde in Br_2

13.The rate constant for a first order reaction is 1.54 x 10^{-3} S^{-1} . Calculate its half life time . (B/B-23)

14.Derive integrated rate law for a first order reaction. (B/B-7) ****

15.Show that the half life period of a zero order reaction is directly proportional to the initial concentration of the reaction. (In. P.NO:215)

16.Identify the order for the following reactions. (B/B-18)

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i) Rusting of iron

ii) Radioactive distintegration of $_{92}U^{238}$

iii)2A + 3B → products ; rate =k$[A]^{1/2}[B]^2$

iv) Acid Hydrolysis of an ester- ans: pseudo first order

17.Explain the effect of catalyst on reaction rate with an example. (B/B-9)

18.Give the schematic representation of proper and improper alignment of reactant for a general reaction A_2 + B_2 → 2AB   IN.P.NO.219 FIG 7.6

19.A first order reaction is 40% complete in 50 minutes. Calculate the value of the rate constant . In what time will the reaction be 80% complete ? (B/B-30)

20.Give three examples for zero order reaction . (In. P.NO:215) ****

21.For the expression Rate =K$[A]^2[B][L]^{3/2}$ What happens to the rate of the reaction When i) [L] increased by 4 times ii)[A]&[B] increased by 2 times iii) [A]decreased to half(B/B-10)

22.If 75% of a first order reaction was completed in 60 minutes. 50% of the same reaction under the same condition would be completed in. (B/B-ONE MARK-22)

23.Define : rate constant. (B/B-2)

24.Describe the graphical representation of first order reaction. (B/B-7) ****

25.How do nature of the reactant influence rate of reaction. (B/B-22)

26.Define half life of a reaction. (B/B-4)

27.   What is pseudo first order reaction? Give an example. (B/B-17) ****

BOOK-INSIDE QUESTIONS:

1. Mention the factors affecting the rate of the reaction. (In.P.NO:222)

2. The half life period of a first order reaction x products is 6.932×10^4 S at 500K . What percentage of x would be decomposed on heating at for 100 mins. [$e^{0.06}$ =1.06] (In.P.NO:216)

3. What is meant by half life period ? (In. P.NO:215) ****

4. Derive relation between half life period and first order reaction. (In. P.NO:215)

5. show that for a first order half life is independent of initial concentration. (In. P.NO:216)

6. Distinguish between order of a reaction and molecularity of a reaction. (In. P.NO:210) ****

7. Explain the factors affecting the rate of reaction. (In. P.NO:222)

8. When a graph is plotted between log K and 1/T a straight line with a slope of -4000k is obtained , calculated the activation energy. (In. P.NO:221)

9. Show that in case of first order reaction , the time required for 99.9% completion is nearly ten times the time required for half completion of the reaction. (In. P.NO:217) ****

10. In a first order reaction A →product 60% of the given sample of A decomposes in 40min. What is the half-life of the reaction. (In. P.NO:217)

11. Define order of reaction ? (In. P.NO:210)

12. What is activation energy ? (In. P.NO:220) ****

 8.IONIC EQUILIBRIUM

PTA – QUESTIONS :

1.Define solubility product a compound? (B/B-9) ****

2. Derive an expression for oswald's dilution law(B/B-12). ****

3.What are the two types of buffer solution ?Give example for each type. (In. P.NO:16)

4.What is buffer index(β) (In. P.NO:18) ****

5. Determination of solubility product from molar solubility. (In. P.NO:26)

6. Derive the Relation between P^H and P^{OH}. (In. P.NO:9)

7. Calculate the P^H of 10^{-7} M HCl. (In. P.NO:11)

8. What are conjugate acid –base pairs ? give example. (In. P.NO:4)

9. What is common ion effect ?. Give an example(B/B-11) ****

10. write note on lewis acid and bases ? (B/B-1) ****

11. Define ionic product of water. (B/B-10) ****

12.The equivalent conductance of M/36 solution of a weak monobasic acid is 6 mho cm^2 $equiv^{-1}$ and at infinite dilution is 400 mho cm^2 $equiv^{-1}$ .Calculate the dissociation constant of this acid. See pta Q/A

13.0.1M solition of HF is weak acid .But 5M solution of HF is strong acid .Why?

14.What do you mean by salt hydrolysis? (In. P.NO:21)

15.The Ka value of HCN is 10^{-9}.What is P^H of0.4M HCN solution? (B/B-16)

16.Explain buffer action of acidic buffer. (In. P.NO:16)

17.Derive expression for hydrolysis constant and Ph of salt of strong acid and weak base. (B/B-18)

18. 50ml of 0.05 M HNO_3 is added to 50 ml of 0.025 M KOH . Calculate the p^H of the resultant solution. (B/B-15)

19. Derive Henderson- Hasselbalch equation. (In. P.NO:18) ****

20. K_{sp} of Ag_2CrO_4 is $1.1x10^{-12}$.What is the solubility of Ag_2CrO_4 in 0.1M K_2CrO_4? (B/B-25)

BOOK –BACK QUESTIONS:

1.what is mean by lewis acid and bases ? (B/B-1)

2. What is common ion effect ?. Give an example(B/B-11) ****

3.Define p^H (B/B-13)

5.Define solubility product. (B/B-9)

6.Define an expression for Oswald's dilution law (B/B-12) ****

7.Identify the conjugated acid base pair for the following reaction in aqueous solution. (B/B-3)

a) HS^- (aq) + HF → F^- (aq) + H_2S (aq)

b) NH_4 + CO_3^{2-} → NH_3 + HCO_3^-

c) HPO_4^{2-} + SO_3^{2-} → PO_4^{3-} + HSO_3

8.Discuss the Lowry –Bronsted concept of acid and bases. (B/B-2)

9.Write the expression for the solubility product of Hg_2Cl_2. (B/B-24) ****

10.Define ionic product of water . Give its value at room temperature. (B/B-10)

11.Derive an expression for the hydrolysis constant and degree of hydrolysis of salt of strong acid and weak base. (B/B-18) ****

12. A saturated solution prepared by dissolving $CaF_{2 (S)}$ in water has $[Ca^{2+}]$ =$3.3x10^{-4}$M .What is the solubility product of CaF_2 ? (B/B-21)

13.Write the expression for the solubility product of $Ca_3(PO_4)_2$. (B/B-20) ****

14.50ml of 0.05 M HNO_3 is added to 50 ml of 0.025 M KOH . Calculate the p^H of the resultant solution. (B/B-15)

15.Calculate the p^H Of 1.5 x 10^{-3} M solution of $Ba(OH)_2$. (B/B-14)

16.Calculate the extent of hydrolysis and the p^H of 0.1 M ammonium acetate Given that K_a=K_b =1.8 x 10^{-5}(B/B-17)

17.Calculate the P^{kb} of NH_4OH , if the P^H of a buffer solution containing 0.1N NH_4OH and 0.1M NH_4Cl is 9.25.

18.The k_a value for HCN is 10^{-9} . What is the p^H of 0.4 M HCN solution. (B/B-16)

19.Calculate the P^H of buffer mixture which contains 7.5 gms .if acetic acid and 10.25 gms of sodium acetate in 1 litre of the solution K_a for acetic acid is 1.8 $x10^{-5}$

20.The ionization constant of 0.2M formic acid is 1.8 x 10^{-4} . calculate its percentage ionization.

21.K_{sp} of Ag_2CrO_4 is $1.1x10^{-12}$.What is the solubility of Ag_2CrO_4 in 0.1M K_2CrO_4? (B/B-25)

BOOK-INSIDE QUESTIONS:

1. 4.Write relation between ionic product and solibility product ? (In. P.NO:25)

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2. write the limitations of arhenius concept of acids and bases. (In .p.no:3)

3. what is buffer capacity ? (In. P.NO:18) ****

4. Calculate the P^H for 0.1 M CH_3COOH . It's dissociation constant is
 1.8 x10^{-5} ? (In. P.NO:15)

5. Calculate the P^H of 10^{-7} M HCl(In. P.NO:11)

6. Differentiate Lewis acid and Lewis base. (In. P.NO:5)

7. What is buffer solution ? .Mentions the two type of buffer solution. (In. P.NO:16) ****

8. Find p^H of the buffer solution that contanining 0.18 mol lit^{-1} acetic acid and 0.20 mol lit^{-1} sodium acetate .ka value of acetic acid is 1.8 x 10^{-5}. (In. P.NO:19)

9. Derive an expression for hydrolysis constant and degree of hydrolysis of salt of strong base and weak acid ? (In. P.NO:21)

10. Calculate : (In. P.NO:24)

i) hydrolysis constant ii) degree of hydrolysis

iii) p^H of 0.05M sodium carbonate solution .pka for HCO_3^- is 10.26.

11. Derive the Relation between P^H and P^{OH} (In. P.NO:9)

12. Determination of solubility product from molar solubility from

i)$BaSO_4$ ii) Ag_2CrO_4 (In. P.NO:26)

13. Identify the conjugate acid –base pairs of following equation in water .with write the balance equation . (In. P.NO:4)

i) NH_4^+ ii) H_2SO_4 iii) CH_3COOH.

14.Derive Henderson- Hasselbalch equation. (In. P.NO:18) ****

15. What is salt hydrolysis ? (In. P.NO:21)

9.ELECTRO CHEMISTRY
PTA – QUESTIONS :

1.A conductivity cell has two platinum electrodes separated by a distance1.5cm and the cross sectional area of each electrode is 2.5sq.cm.Using this cell ,the resistance of 0.5N electrolytic solution was measured 15Ω.Find the specific conductance of the solution. (In. P.NO:35)

3.What are the conversions used in Galvanic cell notation. (In. P.NO:46)

4.What is intercalation ? (In. P.NO:59) ****

5.Write Debye-Huckel and Onsager equation for a uni-univalent electrolyte. (In. P.NO:41) ****

6.The reaction $Zn(s)+Co^{2+}\leftrightarrow Co(s)Zn^{2+}$ occurs in a cell compute the standard emf of the cell.Given that $E^0_{Zn/Zn^{2+}}=+0.76V$ and $E^0_{CO/CO^{2+}}=+0.28V$. See pta q/a

7.What are the electrochemical series ?How is it useful to predict corrosion? (In. P.NO:62)

8. Write a note on Standard Hydrogen Electrode(SHE). (In. P.NO:48)

9. Reduction potentials of metals M_1, M_2 and iron are $E^0_{M_1^{+2}/M_1}=-2.3V$.$E^0_{M_2^{+2}/M2=0.2V}$ and $E^0_{Fe_1^{+2}/Fe1}=-0.44v$ .Predict which metal is better for coating the surface of iron. (B/B-17)

10. Is it possible to store copper sulphate in an iron vessel for a long time ? Explain Given $E^0_{CU2+/Cu}=0.34$ and $E^0_{Fe2+/Fe}=-0.44V$. (B/B-15)

11.Define molar conductance and specific conductance. How they are related? (In. P.NO:35,36)

12.What is the role of salt bridge in Galvanic cell? (In. P.NO:46)

13.Why is AC current used instead of DC in measuring the electrolytic conductance? (B/B-11) ****

14.How cathodic prodection helps to product the metal from corrosion? (In. P.NO:61)

15.State Faraday 's second laws of electrolysis . (B/B-5) ****

16. Describe the construction of Daniel cell. Write the cell reaction. (B/B-6)

17. State kohlraush law. (B/B-3) ****

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BOOK –BACK QUESTIONS:

1.Write a note on sacrificial production . (B/B-25) ****

2.Describe the electrolysis of molten NaCl using inert electrodes. (B/B-4)

3.Conductivity decreases while the dilution of the solution increased . why ? (B/B-2)

4.Derive Nernst equation (B/B-24) ****

5.State Faraday 's laws of electrolysis . (B/B-5)

6.Ionic conductance at infinite dilution of Al^{3+} and SO_4^{2-} 189 and 160 mho cm^2 equivl calculate the equivalent and molar conductance of the electrolyte $Al_2(SO_4)_3$ at infinite dilution. (B/B-27) ****

7.Why is AC current used instead of DC in measuring the electrolytic conductance ? (B/B-11)

8.Describe the construction of Daniel cell. Write the cell reaction. (B/B-6)

9.State kohlraush law. How is it useful to determine the molar conductivity of weak electrolyte at infinite dilution. (B/B-3) ****

10.Explain the function of H_2-O_2 fuel cell(B/B-26) ****

11.A copper electrode is dipped in 0.1M copper sulphate solution at 25^{0}C . calculate the electrode potential of copper .[Given: $E^0_{CU2+/Cu}$ =0.34] (B/B-21)

12.Is it possible to store copper sulphate in an iron vessel for a long time ? Explain Given $E^0_{CU2+/Cu}$ =0.34 and $E^0_{Fe2+/Fe}$ =-0.44V (B/B-15)

13.Calculate the standard emf of the cell : Cd I Cd^{2+} II Cu^{2+} I Cu and determine the cell reaction . the standard reduction potentials of Cu^{2+} I Cu and Cd I Cd^{2+} are 0.34V -0.40V respectively. Predict the feasibility of the cell reaction. (B/B-18)

14.Reduction potentials of two metals M_1, M_2 and iron are $E^0_{M1^{+2}/M1}$ =-2.3V.$E^0_{M2^{+2}/M2=0.2V}$ and $E^0_{Fe1^{+2}/Fe1}$ =-0.44v .Predict which metal is better for coating the surface of iron. (B/B-17)

15.The conductivity of a0.01M solution of a 1:1 weak electrolyte at 298K is 1.5 x 10^{-4} S Cm^{-1} . (B/B-8)

16.Calculate the standard emf of the cell. Cd/cd^{2+}// cu^{2+}/cu And determine the cell reaction.E^0 cu^{2+}/cu=0.34// and E^0 cd^{2+}/cd =-0.40v respectively .Predict the feasibility of the cell reaction. (B/B-18)

17.0.1M NaCl solution is placed in two different cells having constant 0.5 and 0.25cm^{-1} respectively? Which of the two will have greater value of specific conductance. (B/B-12)

18.Two metals M_1 and M_2 have reduction potentials value of $_{-x}$v and $_{+y}$v respectively. Which will liberate H_2 fom H_2SO_4 ?L.NO:9 (B/B-16)

BOOK-INSIDE QUESTIONS:

1. Explain the method to determine electrode potential with illustration. (In. P.NO:48)

2. Explain lithium-ion battery. (In. P.NO:58) ****

3. Write a note on electrochemical mechanism of corrosion . (In. P.NO:60)

4. List out the factors affecting electrolytic conductance . (In. P.NO:37) ****

5. Write a note on Standard Hydrogen Electrode(SHE) (In. P.NO:48)

6. A solution of siver nitrate is electrolysed for 20 minutes with a current of 2 amperes calculate the mass of silver deposited at the cathode. (In. P.NO:55) ****

7. Discuss briefly mercury button cell. (In. P.NO:57) ****

8. Write the overall redox reaction. Which takes place in the galvanic cell . (In. P.NO:44)

9. Define equivalent conductance. (In. P.NO:37) ****

10. Using the calculate emf value of zinc and copper electrode , calculate the emf of the following cell at 25^{0}C
    $Zn_{(s)}$ I Zn^{2+} $_{(aq)}$ II Cu^{2+} $_{(aq)}$ I $Cu_{(s)}$ (In. P.NO:49)

11. How is production of metals form corrosion. (In. P.NO:61)

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12. Define i)electro chemical equivalent ii) molar mass(In. P.NO:54) ****

13. The resistance of 0.15 M solution of an electrode is 50Ω. The specific conductance of the solution is 2.4sm^{-1} .The resistance of 0.5 solution of the same electrolyte measured using the the same cell is 480Ω. Find the equivalent conductivity of 0.5N solution of the electrolyte. (In. P.NO:37)

14. What is molar conductivity? (In. P.NO:36)

10.SURFACE CHEMISTRY

PTA – QUESTIONS :

1. Peptising agent is added to convert precipitate into colloidal solution. Illustrate with an example. (B/B-7)

2. What Is the role of adsorption in the heterogeneous catalysis ? (B/B-24)

3. Define Emulsification and Deemulsification. (In. P.NO:97)

4. what are enzymes ? Explain the mechanism of enzyme action. (B/B-13)

5. What are the characteristics of adsorption? (In. P.NO:71) ****

6. What is Nano catalysis ? give example. (In. P.NO:86) ****

7. What are active centers ? (In. P.NO:82) ****

8. What are the general characteristics of catalyst ? (In. P.NO:78) ****

9.What is the significance of Brownian movement ? (In. P.NO:94) ****

 10. What do you mean by helmholtz electrical double layer? (In. P.NO:94) ****

11. Differentiate physisorption and chemisorption. (B/B-2) ****

12. Give two example for enzyme catalysis? (In. P.NO:83)

13. What happens when hydrogen sulphide gas is passed through a solution of arsenic oxide ? Name the chemical method. (In. P.NO:90) (double decomposition)

14. What are promoters and catalytic poison? (In. P.NO:79) ****

15. Write a note on electrophoresis. (In. P.NO:94) ****

16. What is a flocculation value? (In. P.NO:96)

17.i) Write any three condensation method of preparation of colloids. (In. P.NO:90) ****

ii)mention the medicinal uses of colloids. (In. P.NO:98)

18. . Write short notes on
 i) Negative catalyst(In. P.NO:79)

ii) Phase transfer catalyst(In. P.NO:85)

20. Explain intermediate compound formation theory of catalysis with an example(In. P.NO:80) ****

21. Write a short note on ultrafiltration . (In. P.NO:91) ****

BOOK –BACK QUESTIONS:

1. Addition of alum purifies water. Why ? (B/B-11)

2. What happens when a colloidal sol of $Fe(OH)_3$ and As_2O_3 are mixed ? (B/B-8)

3. What is enzyme catalysis ? Write the special characteristics property of enzyme catalysis. (B/B-13)

4. Describe adsorption theory of catalysis. (B/B-25) ****

5. Describe some feature of catalysis by zeolites. (B/B-15)

6. Write a note on electroosmosis (B/B-21) ****

7. Differentiate physorption and chemisorption. (B/B-2) ****

8. Write a note on catalytic poison (B/B-22)

9. What are the emulsion ? (In. P.NO:97)Give three uses of emulsions. (B/B-16)

10. Which will be adsorbed more readily on the surface of charcoal and why ? NH_3 or CO_2 (B/B-4)

11. Explain does Bleeding stop by rubbing moist alum ? (B/B-17)

12. What is homogeneous catalysis ? (B/B-24)

13. What is the difference between homogeneous and hetrogenenous catalysis. (B/B-24) ****

14. What do you mean by selectivity of catalyst ? (B/B-14)

15. What is meant by Tyndall effect (IN.P.NO :93) ****

16. What is coagulation mention its types. (B/B-20)

17. What is cementation.

18. Comment on the statement colloid is not a substance but its is a state of substance. (B/B-19)

19. a)$CaSO_4$ b)Na_3PO_4 c) $AlCl_3$ the above which has more precipitate power to precipitate Ferric hydroxide sol.(Positively charged)

BOOK-INSIDE QUESTIONS:

1. Write a note on electrophoresis ? (In. P.NO:94) ****

2. Write briefly about the preparation of colloids by condensation methods ? (In. P.NO:90) ****

3. What are promoters ? give example?(In.P.NO:79) ****

4. In zeolite catalysis, reactions occur only inside the pores.why ? (In. P.NO:85)

5. Write a short note on ultrafiltration . (In. P.NO:91) ****

6. Explain intermediate compound formation theory of catalysis with an example(In. P.NO:80) ****

7. What is tanning of leather ? (In. P.NO:98) ****

8. Write short notes on   ****

 i) Negative catalyst(In. P.NO:79)

ii) Phase transfer catalyst(In. P.NO:85)

iii) Auto catalysis (In. P.NO:79)

9. Explain any one dispersion (In. P.NO:88)and condensation method of preparation of colloids(In. P.NO:90)

10. What are the special characteristics of adsorption ? (In. P.NO:71)

11. Write a short note on Brownian movement (In. P.NO:94) ****

12. Write a any three characteristics of catalyst (In. P.NO:78) ****

13. Write a preparation of colloid by exchange of solvent method. (In. P.NO:91)

14. Define gold number(In. P.NO:96) ****

15. Write any three characteristics of chemical adsorption. (In. P.NO:71)

16. What is peptization ? Give example. (In. P.NO:90) ****

17. Write about lyophilic colloids. Give any one example. (In. P.NO:87)

18. Explain the electrical properties of colloidal. (In. P.NO:94) ****

19. Write about optical property of colloid (In. P.NO:93) ****

20. Write note on three uses of colloid. (In. P.NO:98)

21. Explain how colloids prepared by i)Bredig's method(In. P.NO:89) ii) Hydrolysis. (In. P.NO:90) ****

22. Explain any three factors affecting adsorption. (In. P.NO:72)

11.HYDROXY COMPOUNDS AND ETHERS
PTA – QUESTIONS :

1.Is it possible to oxidise t-butyl alcohol using acidified dichromate to from a carbonyl compound? (B/B-8)

2.Writethe chemical equation for oxidation of Ethylene glycol with perlodic acid? (In. P.NO:119)

3.Anisole $\underline{t\text{-butylchloride/AlCl}_3}$ →A $\underline{Cl_2/FeCl_3}$ → B $\underline{HBr/\Delta}$→ C . Complete the about reaction and find A,B,C. (B/B-17-iii)

4.Write note on swern oxidation (In. P.NO:117)and schotten-baumann reaction. (In. P.NO:127) ****

5.An organic compound (A)-$C_3H_8O_3$ used as a sweetening agent, which on oxidation with Fenton's reagent gives a mixture of compounds B and C .Identify A,B, ,C. write possible reaction. see pta q/a

6.Give four uses of diethyl ether? (In. P.NO:138)   ****

7.How will you prepare 2-methyl hexan -2-ol from Grignard reagent? see pta q/a

8. Identify X,A product of the following reaction. (B/B-22)

Acetyle chloride $\underline{CH_3MgBr/H_3O^+}$→X $\underline{acid\ K_2Cr_2O_7}$ → A. ****

9.Write the mechanism ofacid catalysed dehydration of ethanol to give ethane. (B/B-10)

10.What are the test to differentiate ethanol and phenol? (In. P.NO:131) ****

11. The major product formed when 1-ethoxy prop-1-ene is heated with one equivalent of HI. (B/B-2)

12.What happens when 1-phenyl ethonal is treated with acidified $KMnO_4$? (B/B-9)

13. How will you prepared from glycerol to acrolein (In. P.NO:121) ****

14. How the following conversion are effected ****

i) phenol → salicyladehyde (In. P.NO:130)

ii) phenol → phenolphthalein(In. P.NO:131)

iii) phenol → 1,4 dioxane (In. P.NO:120)

BOOK –BACK QUESTIONS:

1.How will you prepare phenol from chloro benzene ? (B/B-11-i)

2.Explain kolbes reaction. (B/B-12) ****

3.what is metamerism and give one example (B/B-15)

4.How are the following conversions effected

 i) benzyl chloride → benzyl alcohol(B/B-16-i)

ii) benzyl alcohol → benzoic acid(B/B-16-ii)

iii) phenol → p-hydroxy azobenzene (In. P.NO:131)

iv)glycol → oxirane(In. P.NO:119)

5.Write the acid catalysed dehydration of ethanol to ethane. (B/B-10)

6.Give the structure and IUPAC name of metamers of 2-methyoxy propane. (B/B-15)

7.Write the IUPAC name of the following

 i) $CH_3-CH(OH)-CH_3$ ii) $CH_3-CH_2-O-CH_3$ iii) $C_6H_5CH_2OH$ iv) isopropyl alcohol

8.Is it possible to oxidise t-butyl alcohol using acidified dichromate to form a carbonyl compound . (B/B-8)

9.How is acetylene convert to n-butyl alcohol. (B/B-20)

10.What happens when 1-phenyl ethonal is treated with acidified $KMno_4$? (B/B-9)

11.Identify X,A product of the following reaction. (B/B-22)

Acetyle chloride $\underline{CH_3MgBr/H_3O^+}$→X $\underline{acid\ K_2Cr_2O_7}$ → A ****

12.Can we use nucleophiles such as NH_3 CH_3O for the nuclephilic substitution of alcohols. (B/B-7)

13.Compound (A) C_2H_4 undergo hydroxylation using Beayers reagent gives B .B reacts with anhydrous $ZnCL_2$ gives C.Identify A,B and C?

14.How can you convert propane -1-ol to propane-2-ol

15.Complete the following reaction;

i)glycol $\underline{anhy.ZnCl_2}$→ (In. P.NO:119) ii)glycerol$\underline{KHSO_4}$→C(In. P.NO:121)

16.Compound A having molecular formula C_6H_6O gives violet colour with natural $FeCl_3$. A reacts with NH_3 in the presence of any $ZnCl_2$ to gove 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 .Idendify compounds A,B,C and D and wrirte the reaction?

17.Define kolbe's reaction?(B/B:12) ****

BOOK-INSIDE QUESTIONS:

1. write the uses of diethyl ether and glycerol ? (In. P.NO:138 & 122) ****

2. Give an example for simple ether and mixed ether ? (In. P.NO:133)

3. what is saponification reaction. (In. P.NO:110) ****

4. How will you convert Glycol into 1,4 Dioxane (In. P.NO:120)

5. Explain Coupling reaction. (In. P.NO:131) ****

6.Write the structure of picric acid and pyrogallol (In. P.NO:129 & 125)

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7. How will you prepare ether by Williamson synthesis with mechanism(In. P.NO:135)

8. what are the uses of anisole ? (In. P.NO:139)

9. How will you distinguish 1^0 , 2^0 , 3^0 alcohols by Lucas test. (In. P.NO:111) ****

10. How are the following compounds prepared from glycerol(In. P.NO:121) ****
i) nitroglycerine   ii) acrolein   iii) glycerose

11. Give any two test to differentiate phenol and alcohol(In. P.NO:131) ****

12. Write a note on autooxidation of ethers(In. P.NO:137)

13. Explain the saytzeff's rule(In. P.NO:116)

14. How the following conversion are effected
i) phenol → salicyladehyde (In. P.NO:130)
ii) phenol → phenolphthalein(In. P.NO:131)

15. Write notes on i) Dow's process(In. P.NO:126) ii) Reimer Tiemann Reaction(In. P.NO:130) ****

16. Write note Biological oxidation(In. P.NO:118)

17. i) What is PCC ? mention its use. Ii) swern oxidation(In. P.NO:117)

18.How is phenol prepared from ? i) benzene diazonium chloride(In. P.NO:126) ii) cumene(isopropylbenzene) (In. P.NO:127)

19. How will you prepared the following using Grignard reagent
i) t-butyl alcohol ii) allyl alcohol(In. P.NO:110 E/Y)

20.what happens periodic acid added to glycol ? (In. P.NO:119)

21. Compare the acidity of 1^0 2^0 and 3^0 alcohol(In. P.NO:123)

22.What happens when m-cresol is treated with acidic solution of sodium dichromate. (In. P.NO:132 E/Y)

23.How will you conversion the following effected
 i) Glycol → Formaldehyde(In.P.NP:120)
ii)2-methyl propan-2-ol →2-methyl prop-1-ene

24. Identify A and B $CH_3-CH=CH_2 + H_2O/H^+$ → A (In. P.NO:108)
          $CH_3-CH=CH_2 + B_2H_6 +H_2O_2/OH^-$ → B(In. P.NO:109)

25. How is phenolphthalein is prepared ? (In. P.NO:131) ****

26. How ether is prepared from diazomethane? (In. P.NO:135)

27. I) Complete the following reaction
a) $C_2H_5OC_2H_5+H^+/H_2O-$→b) $C_2H_5OC_2H_5+$excess of O_2→(In. P.NO:137)
ii) mention the uses of phenol(2) (In. P.NO:131)

28. How can you convert phenol into a)Picric acid and (In. P.NO:129) b)Anisole(In. P.NO:128)

29. Short notes on schotten-Baumann reaction. (In. P.NO:127) ****

12.CARBONYL COMPOUNDS AND CARBOXYLIC ACID
PTA – QUESTIONS :

1.How will you prepare malachite green dye from benzaldehyde? (B/B-16-Viii)

2. Explain the mechanism of cannizaro reaction? (In.p.no: 163) ****

3.a carbonyl compound a having molecular formula $C_5H_{10}O$ forms crystalline precipitate with sodiumbisulphite and givespositive iodoform test. A does not reduce fehlings solution. Identify 'A' .See pta Q/A

4.A ether(A) $C_5H_{12}O$ when heated with excess of hot concentrated HI, produced two alkyl halides, which on hydrolysis forms compound (B) and (c). oxidation of (B) gives an acid (D) where as oxidation of C gives ketone E . Identify A,B,C,D and E and write the chemical equation. See pta Q/A

5. i)How will you prepare benzoic acid from toluene? (In.p.no: 171)
ii)Write two tests to identify carboxylic acid. (In.p.no: 177) ****

6.How will you prepare acetic anhydride (In.p.no: 183) and acetyl chloride from CH_3COOH (In.p.no: 182)

7.How are the following conversions effected

i)Hex-3-ane $\rightarrow$ hexane-3-one. (B/B-12-b)

ii)benzaldehyde $\rightarrow$ 2-hydroxy phenyl acetic acid See pta Q/A

8.Write short note on i) benedict's solution test (In.p.no: 167) ii) Knoevenagal reaction (In.p.no: 165) ****

9.Write note on Etard reaction. (In.p.no: 151)

10.An organic compound (A)-C_2H_4O reduces Tollen's and fehling's solution. A –react with methanol and HCl to give compound (B)-$C_4H_{10}O_2$. A-onreaction with methanol in the presenceof dilute NaOH to give compound (C)-$C_3H_6O_2$.Idendify compounds A,B,C with necessary reactions. see pta q/a

11.An organic compound C_3H_5Br (A) on treatment with Mg in try ether gives (B) Which on treatment with CO_2 followed by acidification gives (C) and write possible equation. see pta q/a

12.How is the following conversation affected? see pta q/a

Hex-4-enitrile$\rightarrow$hex-4-enal.

13. How is the following conversation affected?

(i)Benzene$\rightarrow$acetophenone. (In.p.no: 153)

(ii)Benzaldehyde $\rightarrow$hydrobenzamide.

14.Why formic acid act as strong reducing agent? Give one equation to show its reducing property. (In.p.no: 177) ****

15.Name the ester which has the following flavour? (In.p.no: 185)

(1) Banana (2) Pineapple (3)Orange (4) Apricot

16. Explain the reaction mechanism of aldol condensation . (In.p.no: 162) ****

17.Compound A of molecular formula C_7H_6O reduces tollens reagent when A reacts with 50% NaOH   gives compound B of molecular formula C_7H_8O and C of molecular formula $C_7H_5O_2Na$. compound C on treatment with dil HCl gives compound D of molecular formula $C_7H_6O_2$. when D is heated with sodalime gives compound E. identify ABCD &E. Write the corresponding quations.

BOOK –BACK QUESTIONS

1.How will you prepare,

i) Acetic anhydride from acetic acid (B/B-16-i)

ii) Ethylacetate from methylacetate (B/B-16-ii)

iii) Acetamide from methylcynaide (B/B-16-iii)

iv) malachitegreen from benzaldehyde (B/B-16-viii)

v) Acetophenone from acetylchloride (B/B-16-v)

2.Compound A of molecular formula C_7H_6O reduces tollen's reagent when A reacts witn 50% NaOH give compound B of molecular formula C_7H_8O and c of molecular formula $C_7H_5O_2$ Na. compound c on treatment with dil HCl gives compound D of molecular formula $C_7H_6O_2$. When D is heated with sodalime gives compound E. identify A,B,C,D & E. write the corresponding equations.

3. Anhydrocarbon (A) C_8H_{10} on ozonolysis give (B) on $C_4H_6O_2$ only . Compound (C) C_3H_5Br on treatment with Mg in dry ether gives (D)

which on treatment with CO_2 followed by acitification gives (C). identify (A), (D) and (C) .

5.How will you following the conversions effected ? (B/B-12)

   i) phenyl methanol to benzoin ii) propanal into buatanone

6.What is the major product obtained when two moles C_2H_5MgBr is truted with $C_6H_5COOH_3$ followed by acid hydrolysis?

7.Compound (A)C_3H_3Br on treatment with magnesium in dry ether gives (B)Which on treatment with CO_2 followed by acidification gives (c) Identify A,B and C

8.Convert hex-3yne to hexan-3-one? (B/B-12-b)

9.How will you convert benzaldehyde into following compounds . (B/B-8)

  i)benzophenone ii) benzoic acid iii) α-hydroxy phenol acetic acid

10.An alkene (A) On the ozonolysis give propanone and aldehyde (B) is oxidized (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.

12.How will you convert benzaldehyde to (i)$C_6H_5CH_3$

13.An aromatic aldehyde (A) of molecular formula C_7H_6O Which has the smell of bitter almonds on treatments with (CH_3CO_2) and CH_3COONa to give compound (B)Which is an aromatic unsaturated add.(A),(B) and (C).Explain the reactions.

14.How propanoic acid is prepared starting from

a)an alcohol b)CO_2 C)an alkene

15.CH_3COOH + $\underline{SOCL_2}$ → A $\underline{Pd/BaSO_4}$ → B $\underline{NaOH}$→ C (B/B-6)

16.Write the structure of the aldehyde,carboxylic,acid and ester that yield 4-methylpent-2-ene-1-ol?

BOOK-INSIDE QUESTIONS:

1. Account for the reducing nature of formic acid. (In.p.no: 177) ****

2. How does ammonia react with the following (In.p.no: 158,158,159)

i) formaldehyde ii) acetone iii) benzaldehyde ****

3.How will you convert acetaldehyde to (In.p.no: 162,163)

i) crotonaldehyde ii) Cinnamaldehyde. ****

4 .How will you prepare ethanenitrile from Grignard reagent ?

5. Explain the reaction mechanism of aldol condensation . (In.p.no: 162) ****

6.6HCHO + $4NH_3$ → A + $6H_2O$ identify compound A and write its structure and use (or) How will you prepare Urotropine and its uses ? (In.p.no: 158)

7. How will you prepare benzoic acid using grignard reagent. (In.p.no: 170)

8. What is kolbe's electrolytic decarboxylation reaction. (In.p.no: 175) ****

9. Short notes on Benedict's solution test. (In.p.no: 167) ****

10. Write any one test for aldehyde (In.p.no: 166) ****

11. Formic acid reduces tollen's reagent .but acetic acid not ? why ? justify ? (In.p.no: 177)

12. What is trans esterification? (In.p.no: 185) ****

13. Write about knoevenagal reaction (In.p.no: 165)and

rosenmund reduction? (In.p.no: 151) ****

14. The oxidation of unsymmetrical ketone is governed by which rule? State the rule with suitable examples? (In.p.no :159-B-b)

15. Explain the steps involved in the mechanism of esterification reaction? (In.p.no: 174) ****

16. friedel craft reaction? (In.p.no: 153) ****

17. iii) perkin's reaction (In.p.no: 165) iv) Claisen condensation? (In.p.no: 186) ****

18. Give any three test for carboxylic acid ? (In.p.no: 177) ****

19. Identify the product of following reaction

i) ozonolysis of But-2-ene and but-1-ene (In.p.no: 149)

ii) Dry distillation of i) calcium ethanoate ii) calcium methanoate (In.p.no: 150)

20. Explain the mechanism of cannizaro reaction? (In.p.no: 163) ****

21. Illustrate the reducing property of acetaldehyde with examples. (In.p.no: 166)

22. Write notes on claisen ester condensation reaction. (In.p.no: 186)

23. How is benzoic acid prepared from the following compounds?

1) toluene (In.p.no: 171) 2)benzoic anhydride (In.p.no: 171) 3)carbon di oxide(In.p.no: 170)

13.ORGANIC NITROGEN COMPOUNDS
PTA – QUESTIONS :

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1.(i)In decreasing order of the pK_b values: $C_2H_5NH_2, C_6H_5N(CH_3)_2, (C_2H_5)_2NH, CH_3NH_2$

(ii)Increasing order of basic strength: $C_6H_5NH_2, C_6H_5N(CH_3)_2, (C_2H_5)NH, CH_3NH_2$. See PTA Q/A

2.How the following conversions are effected ?

i) Nitro benzene → N-phenyl hydroxyl amine (B/B-4-vi)

ii) Propanamide → propan-1-amine. (B/B-10-ii)

iii) Aniline → p-nitroaniline (In.p.no: 218)

3.An organic compound (A) on reduction gives compound (B) on treat with $CHCl_3$ and alcoholic KOH gives (C).(C) ON catalytic reduction gives N-methyl aniline.Idendify A,B,C and write its equation.

4.Account the following

  i). Why does aniline not undergo friedel craft reaction? (B/B-8-i) ****

ii).Ethylamine is soluble in water whereas aniline is not. (B/B-8-v)

 iii) Amines are more basic than amide. (B/B-8-vi) ****

5.An organic compound (A)- C_7H_7NO on treatment with Br_2 and KOH give an amine which gives carbylamines test. (B) upon diazotization to give (C) . (C) on coupling p-cresol to give compound (D). A, B, C, and D with necessary reaction.

6.An organic compound (A) –CNCl react with methyl magnesium Bromide to give compound B-(C_2H_3N).B- upon catalytic reduction to give compound C-(C_2H_7N).C gives carbylamines test .Identify A,B,C and write the reaction.

7.What happens when acetoneoxime on oxidation with triflouroperoxy acetic acid? (B/B-3iv)

8.There are two isomers with the formula CH_3NO_2. How will you distinguish between them? (In.p.no: 199)

9.An aromatic nitro compound (A) on reaction with Sn/HCl gives compound (B) C_6H_7N, Which on treatment with Benzoyal chloride in the presence of pyridine to give compound (C). Compound (B) on treatment with CH_3Br to give compound (D) which further reacts with $NaNO_2$/HCl to give compound (E) with yellow oil liquid .Idendify (A) to (E) and write the reaction.

10.Write a note on Sabatier-mailhe methiod? (In.p.no: 210)

11. Idendify compounds A,B and C in the following sequence of reaction.

CH_3CH_2NC $\underline{HgO}$→ A $\underline{H_2O}$→ B $\underline{NaNO_2/HCl}$→ C.   (B/B-5-vii)

12.Write the uses of nitroalkanes. (In.p.no: 228)

13.An organic compound C_2H_6O (A) heated with con H_2SO_4 at 443K to give an unsaturated hydrocarbon C_2H_4 (B) which on treatment with Bayers reagent to give compound C_2H_6O2 (C) which is used as antifreeze in automobile radiator. compound (C) distilled with con H_2SO_4 to give cyclic compound $C_4H_8O_2$ (D).compound (A) is heated with Con H_2SO_4 at 413K to give compound C_4H_{10} (E).Idendify compounds (A) to (E) and write equation.

14. Write short notes on ****

 i)Gabriel phthalimide synthesis? (B/B-6-(3))

 ii)mustard oil reaction (B/B-6-vi) ****

iii) Carbylamine reaction (B/B-6-v) ****

BOOK –BACK QUESTIONS:

1.Why does aniline not undergo friedel craft reaction? (B/B-8-i) ****

2.Explain about Gabriel phthalimide synthesis? (B/B-6-(3)) ****

3.Write the follow reaction 1)mustard oil reaction (B/B-6-vi) ****

4. Diazotiantion? (B/B-6-viii) ****

5.Give a test to identify the primary amines(carbylamine)? (B/B-6-v) ****

6.Write any one reaction which retains diazo group? (coupling reaction)(B/B-6-vii) ****

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7.An organic compound A with molecular formula C_7H_7NO reacts with Br_2/KOH to givecompound B which up on reaction with $NaNO_2$ &HCl at 0^0C gives C. Identify A,B and C also write suitable reaction to justify your identification?

8.Explain the following reaction i)Gattermann reaction (In.p.no: 220) ii)Coupling reaction in aniline (B/B-6-vii) ****

9.Write down the possible isomers of the $C_4H_9NO_2$ give their structure ? (B/B-1)

10.Write short notes on the following ****

i)Gomberg reaction(B/B-6-ix) ****

ii)Schotten baumann reaction (B/B-6-iv) ****

iii) Diazotiantion (B/B-6-viii) ****

v) Hoffmann's bromamide reaction(B/B-6-i) ****

11.Organic compound A (C_7H_8) oxidation of alkali potassium permanganate to B($C_7H_6O_2$) compound.Compound B react with $Br_2/FeBr_2$ to compound c ($C_7H_5O_2Br$). Identify the A,B,C compound and explain the reaction.

12.identify A,B,C and D

  aniline +benzaldehyde → A →C+D (B/B-14)

13.why PK_b of aniline is more than ethylamine. (B/B-8-iii)

14.An organic compound (A) of molecular formula C_6H_6O gives violet colour with neutral $FeCl_3$ gives maximum of two isomers (B) and (C) when an alkaline solution of (A) is refluxed with CCl_4 (A) also reacts with $C_6H_5N_2Cl$ to give the compound (D) which is red orange dye . Identify (A) ,(B),(C) and (D) . Explain with suitable chemical reactions

15.Arrange the following in their increasing order of basic strength a) NH_3,CH_3NH_2 , $(CH_3)_2NH$, $(CH_3)_2N$,(aq. Solution)

  b) $NH_3,C_2H_5NH_2$, $(C_2H_5)_2NH$, $(C_2H_5)_3N$,(aq. Solution) (B/B-9-iii)

16. Write the electrolytic reduction reaction of nitro benzene (In.p.no: 204) ****

17. Write a short note on Nef carbonyl synthesis? (In.p.no: 203) ****

BOOK-INSIDE QUESTIONS:

1. Explain about the hydrolysis reaction of nitroalkanes? (In.p.no: 202)

2. Explain the various types of isomerism in nitroalkanes? (In.p.no: 199)

3. How will you distinguish between primary,secondary and tertiary alphatic amines? (B/B-7) ****

4. Write a note trope nitrile condensation. (In.p.no: 225)

5. How are the following conversions effected i) benzene diazonium chloride to biphenyl (In.p.no: 221) ii) benzene diazonium to chloro benzene (In.p.no: 220) ****

6. Wirte the sand meyer reaction (In.p.no: 220) ****

7.How is methyl isocyanide prepared from N-alkyl formamide?(IN.P.NO:226)

14.BIOMOLECULES

PTA – QUESTIONS :

1.Name the vitamins whose deficiency cause.

i)Pellegra ii)Beri-Beri iii)Night blindness (In.p.no: 259-table-14.2)

2.What happens when fructose is partially reduced with sodium amalgam and water. (In.p.no: 245)

3. Write the structure of α-D(+) glucophyranose.(B/B-16) ****

4.Mention the biological importanceof lipids. (B/B-19) ****

5.What are harmones ? give example. (B/B-13)

6. Write a short note on peptide bond? (B/B-14) ****

7.Write the zwitter ion structure of alanine? (B/B-4) ****

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8.What is the different between fibrous protein and globular protein? (In.p.no: 253)

9.Write a note on denaturation of proteins. (B/B-8) ****

10.Explain primary ,secondary and tertiary structure of proteins. (In.p.no: 254) ****

11.Draw the structure of cellulose and Sucrose. (In.p.no: 249,247) ****

12.Write a note on formation of α-helix. (B/B-18)

13..Write any four difference beteween DNA and RNA ? (B/B-5) ****

14. Explain the structure of fructose. (In.p.no: 244) ****

15.Mention any three imporatance of proteins in biological process? (In.p.no: 256)

16.How can you confirm the presence of aldehyde and hydroxyl groups present in glucose? (In.p.no: 242)

BOOK –BACK QUESTIONS:
1.Classify the following into monosaccharides diogosaccharides and polysaccharides.A)Strech B)Glucose C)Galactose D)Maltose (B/B-11)

2.Give any two difference beteween glucose and fructose? ****

3.Give one function of lipid in living organism? (B/B-19)

4.Define enzymes? (B/B-15)

5.What type of linkeges hold together monomers of DNA? (B/B-1)

6.How are vitamins classified ? (B/B-12) ****

7.Write the structure of all possible dipeptides which can be obtained from glycine and alanine? (B/B-14)

8.Give two difference beteween Hormoes and Vitamins? (B/B-7) ****

9.Write any three difference beteween DNA and RNA ? (B/B-5) ****

10.Write the structure of α-D(+) glucophyranose. (B/B-16) ****

11.What are reducing and non-reducing sugars ? (B/B-9) ****

12.Explain the composition and structure of nucleic acids ? IN.P.NO: 260

13.Write a note on denaturation of proteins. (B/B-8)

14.Give the difference between primary and secondary structure of proteins. (B/B-2) ****

15.Define zwitter ions. (B/B-4) ****

16.Write note on formation of α-helix. (B/B-18)

17.What are the harmones ?Give an example. (B/B-13)

18.Explain the mechanism of enzyme action? IN P. NO 257

BOOK-INSIDE QUESTIONS:
1.Identify A and B Fructose + conc HNO_3→A+B.Write the equation (In.p.no: 246) ****

2. Dintinguis nucleoside from nucleotides? (In.p.no: 262)

3. Write short note on cyclic structure of fructose? (In.p.no: 246) ****

4. Explain the structure of proteins. (In.p.no: 254)

5. Mention the importance of carbohydrates. (In.p.no: 250)

6. Eluciate the structure of glucose. (In.p.no: 241) ****

7. How will you classify carbohydrates. (In.p.no: 239) ****

15.CHEMISTRY IN EVERYDAY LIFE
PTA – QUESTIONS :
1.What are bio degrable polymers? Give two examples. (B/B-16) ****

2. How the transquilizers work in body ? (B/B-9)

3.Write a note on TFM value. (In.p.no: 284)

4.How nylon -6 is prepared ? (In.p.no: 289)

5. What are food preservatives? (B/B-6) ****

6.Write the mode of action and uses of antacids. Give an example. (In.p.no: 279)

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7.Define the term therapeutic index. How is it related to the safety of the drug? (In.p.no: 273)

8. How is terylene prepared ? (B/B-17) ****

9. .Explain the mechanism of cleansing action of soaps and detergents. (B/B-11)

10. What are Antiseptics? Give an example. (In.p.no: 282) ****

11. How polymers are classified on the basis of structure and molecular forces, give examples of each one . (In.p.no: 286)

12.Given example and use of histamine? (In.p.no: 280)

13. . Write a note on antioxidants. (In.p.no: 283)

14. .How will you prepare nylon 66? And buna-s (IN.P.NO : 289-292) ****

BOOK –BACK QUESTIONS:

1.How is terylene prepared ? (B/B-17) ****

2.Why do soaps not work in hard work ? (B/B-7)

3.How the transquilizers work in body ? (B/B-9)

4.What are food preservatives? (B/B-6) ****

5.Which chemical is responsible for the antiseptic properties of Dettol? (B/B-1)

6.Name one substance which can act as both analgesic antipyretic. (B/B-3)

7.how do antiseptics differ from disinfectants ? (B/B-5) ****

8.Write briefly on vulcanization of rubber . (B/B-18) ****

9.What are antifertility drugs ?Give an example . (B/B-14)

10.Explain any five therapeutic action of different classes of drugs . see pta q/a

11.What are bio degrable polymers? Give examples (B/B-16) ****

12.What are drugs ? How are they classified ? (B/B-8)

13.Explain the mechanism of cleansing action of soaps and detergents. (B/B-11)   .

14.what are narcotic and non-narcotic drugs. give examples. (B/B-13) ****

15.How will you prepare nylon 66? Give its use IN.P.NO :289

16.Write the structural formula of aspirin? (B/B-10) ****
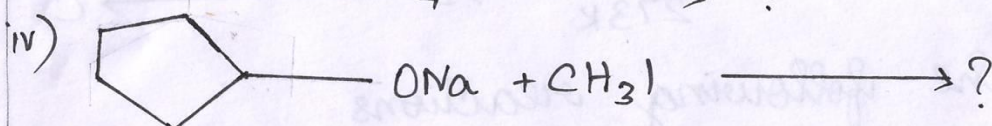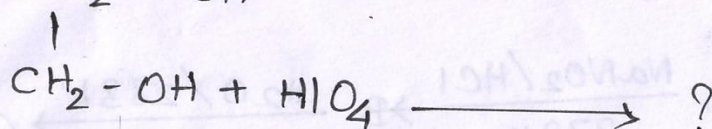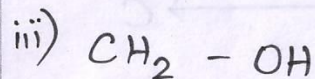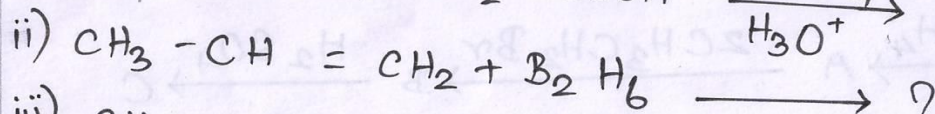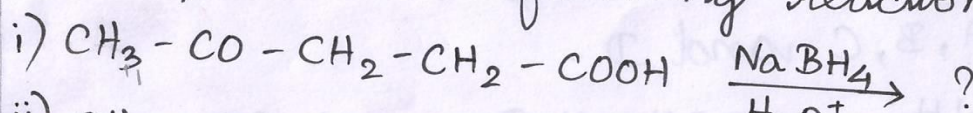
BOOK-INSIDE QUESTIONS:

1. Explain the role of drugs when their target is as
a)enzymes b)Receptors (In.p.no: 275,276)

2. Give any six importance categories of food additives? (In.p.no: 283)

3. How do you prepare Teflon ?Give its uses. (In.p.no: 288) ****

4. Write a note on antioxidants. (In.p.no: 283) ****

5. What are the advantages food additives ? (In.p.no: 283)

6. Give an example and use of antihistamine. (In.p.no: 280)

7. Explain the preparation of Nylon-6,6 , Buna-S IN.P.NO ; 289,292 ****

8. What is therapeutic index ? (In.p.no: 273)
    PHBV (In.p.no: ,293)

9. What is TFM?How TFM used? (In.p.no: 284)

10. What is antiseptic agent give an example? (In.p.no: 282)

11. Write a note on synthedic detergents? (In.p.no: 285)

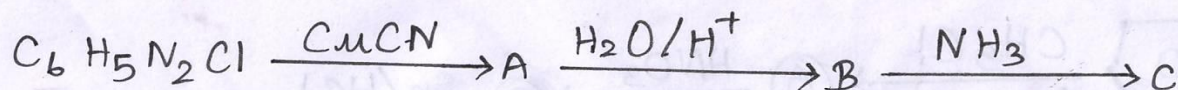12. How anaesthetics work in our body? How are classified? Give example (In.p.no: 279)

PROBLEMS

1. Identify A to F in the following Frequency of reactions.

$$\bigcirc \xrightarrow[AlCl_3]{CH_3Cl} A \xrightarrow{HNO_3/H_2SO_4} B \xrightarrow{Sn/HCl} C \xrightarrow[HCl]{NaNO_2} D$$

$$\downarrow 0°C \quad \downarrow CuCN$$

$$F \xleftarrow{H_2O/H^\circ} E$$

2. Complete the following reactions:

i) $CH_3 - CO - CH_2 - CH_2 - COOH \xrightarrow[H_3O^+]{NaBH_4}$?

ii) $CH_3 - CH = CH_2 + B_2H_6 \longrightarrow$?

iii) $CH_2 - OH$
　　　|
　　$CH_2 - OH + HIO_4 \longrightarrow$?

iv) — $ONa + CH_3I \longrightarrow$?

v) $+ CH_3COCl \xrightarrow{anhy \; AlCl_3}$?
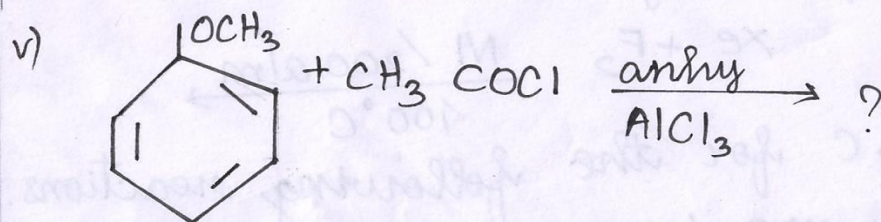
3. Identify the compounds A, B and C

$$C_6H_5N_2Cl \xrightarrow{CuCN} A \xrightarrow{H_2O/H^+} B \xrightarrow{NH_3} C$$

4. Acetyl Chloride $\xrightarrow[\text{ii) } H_3O^+]{\text{i) } CH_3MgBr}$ X $\xrightarrow[K_2Cr_2O_7]{H^+}$ A Find X, A

5. Identify A, B, X and Y in the following frequency of reactions.

Butan-2-al $\xrightarrow{SOCl_2}$ A $\xrightarrow[\text{Ether}]{Mg}$ B

$\downarrow Cu/573K$

$\downarrow X$ $\downarrow X$

          Y

6. $CH_3COOH + PCl_5 \rightarrow A \xrightarrow{NH_3} B$.

7. Identify A, B, C and D.

$CH_3-NO_2 \xrightarrow{L_1AlH_4} A \xrightarrow{2CH_3CH_2Br} B \xrightarrow{H_2SO_4} C$

8. Identify A, B, C

$C_6H_5NO_2 \xrightarrow{Fe/HCl} A \xrightarrow[273K]{NaNO_2/HCl} B \xrightarrow{H_2O/283K} C$

9. Complete the following reactions

$3b + Cl_2 \rightarrow$

$Xe + F_2 \xrightarrow[400°C]{NI/200\,atm}$
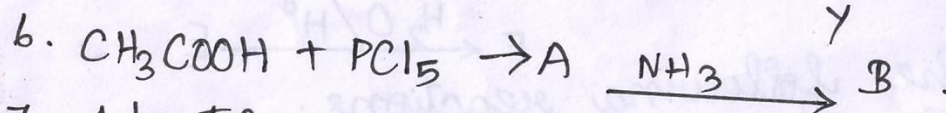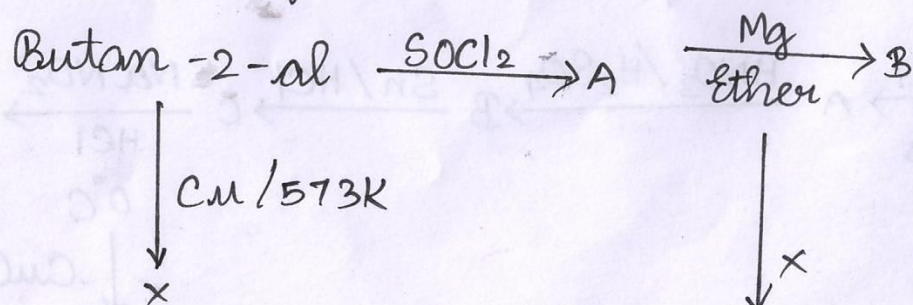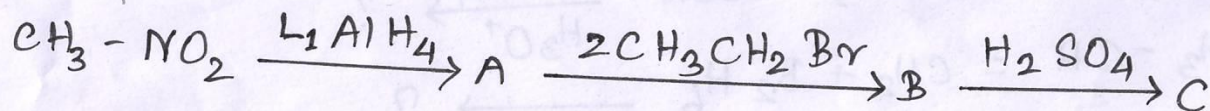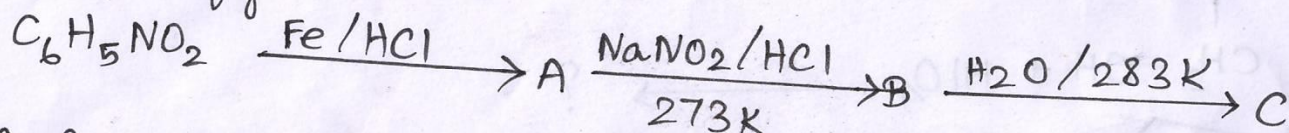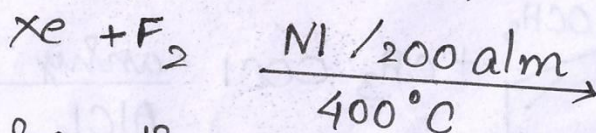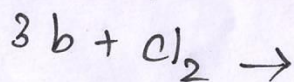
10. Identify A, B, C for the following reactions.

$\bigcirc \xrightarrow[AlCl_3]{CH_2Cl} A \xrightarrow{HNO_3/H_2SO_4} B \xrightarrow{Bn/HCl} C$

11. $\langle O \rangle \xrightarrow[\text{Anhy } AlCl_3]{CH_3Cl} Ⓐ \xrightarrow[H_2SO_4]{HNO_3} Ⓑ \xrightarrow{Sn/HCl} Ⓒ$
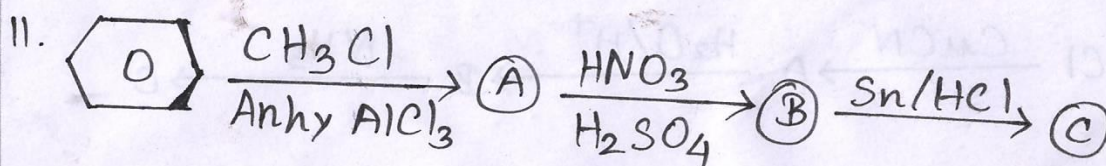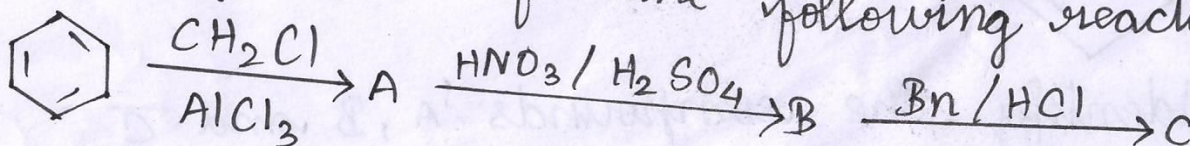
12. Predict A, B, C and D for the following reaction.

$$\text{(phthalic anhydride)} \xrightarrow[\Delta]{NH_3} A \xrightarrow[ii) B]{i) KOH} C \xrightarrow{H_2O\ H^+} D + H_2N-CH-CH_3$$
with CH_3 branch

13.

$$\text{(HO-...-OH diacid)} \xrightarrow{SOCl_2} A \xrightarrow{NH_3} B \xrightarrow{LiAlH_4} C.$$
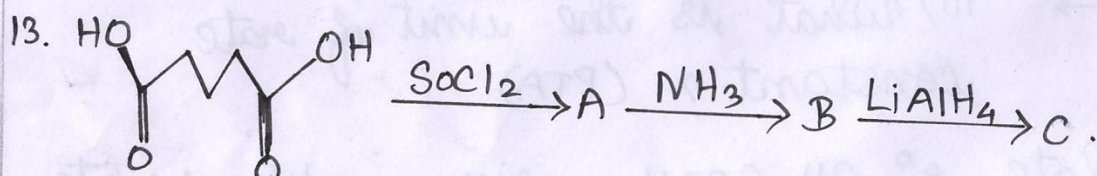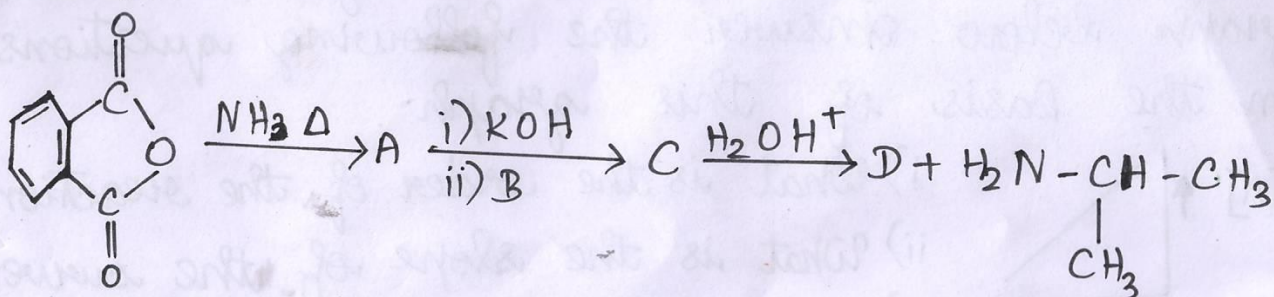
Identify A, B and C. (PTA)

14. Write the IUPAC name for the following

a) (cyclohexanol with OH)

b) $CH_3 - O - \overset{\overset{CH_3}{|}}{CH} - CH_3$

15. Complete the reaction. (PTA)

i) $CH_3 - CH = \overset{\overset{}{|}}{C} - CH_3 \xrightarrow[ii) zn/H_2O]{i) O_3}$?
   with CH_3 branch on C

ii) $CH_3 COCH_3 \xrightarrow[H_2O]{Mg-Hg}$?
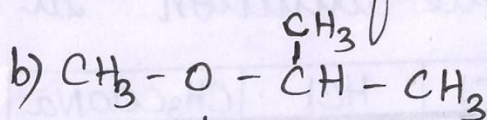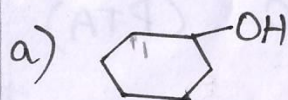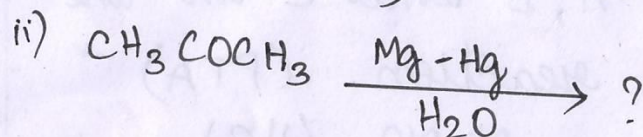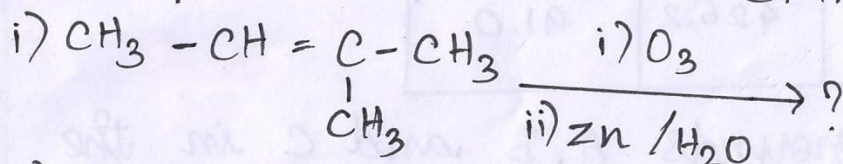
16. An organic compound C_3H_4 (A) on hydration with Hg^{2+}/H_2SO_4 gives compound (B) which gives positive iodoform test. Compound (B) heated with NH_2-NH_2/C_2H_5ONa to give hydrocarbon (C). (B) also treated with HCHO in the presence of dil NaOH gives compound (D). Identify A, B, C and D. Write the chemical reactions involved. (PTA)

17. For the general reaction $A \longrightarrow B$. Plot of concentration of A vs time is given in the graph below. Answer the following questions on the basis of this graph.
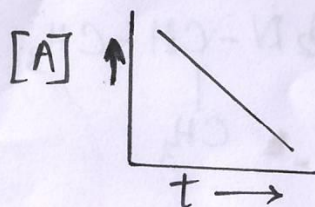

i) What is the order of the reaction?

ii) What is the slope of the curve?
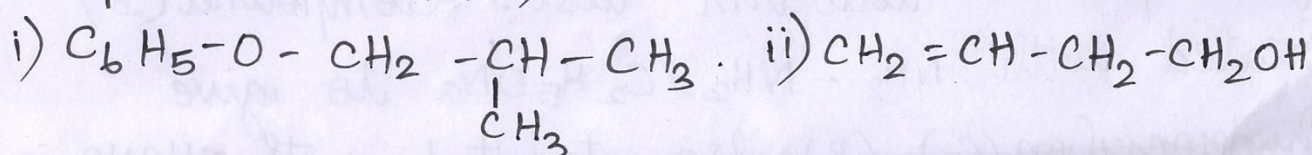
iii) What is the unit of rate constant? (PTA)

18. Calculate A° CH_3COOH using appropriate molar conductance of the electrolytes listed below at infinite dilution at $25^\circ C$. (PTA)

Electrolyte	NaCl	HCl	CH_3COONa
A° (S cm² mol⁻¹)	126.5	426.2	91.0

19. Identify Compounds A, B and C in the following sequence of reaction. (PTA)

$$CH_3CH_2NC \xrightarrow{HgO} A \xrightarrow{H_2O} B \xrightarrow[H_2O]{NaNO_2/HCl} C$$
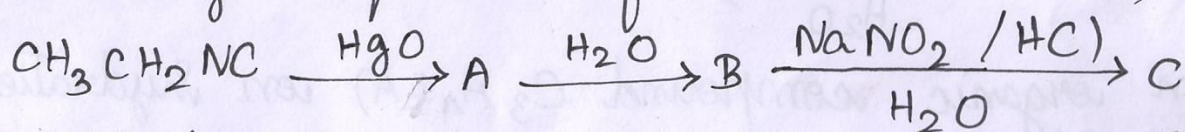
20. Write the IUPAC name of the following compounds. (PTA)

i) $C_6H_5-O-CH_2-\underset{\underset{CH_3}{|}}{CH}-CH_3$.   ii) $CH_2=CH-CH_2-CH_2OH$

iii) Neopentyl alcohol.   iv) Glycerol.

May be Any Comments…………

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"Life is nothing without chemistry.

All are made up of atoms and molecules"