# 12th CHEMISTRY QUESTION BANK VOLUME-I

# 12th CHEMISTRY
# FULL PORTION
# VOLUME -I
# IMPORTANT QUESTIONS
# BY
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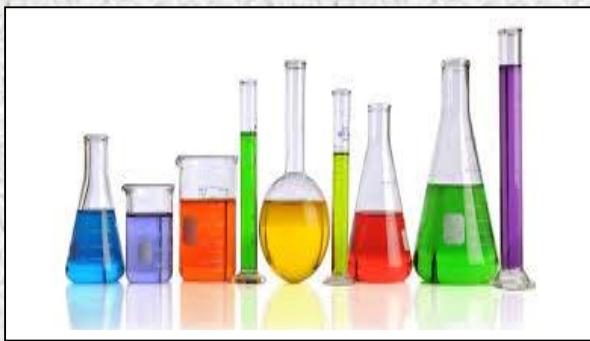
## *12th CHEMISTRY QUESTION BANK VOLUME-I*

**Note :**

- ✓ **every book back question is very important in every lessons**
- ✓ **Every government public question is very important. So compulsory study well**
- ✓ **Bold question is public question in the material**
- ✓ **Interior page number- in.p.n`o,**
- ✓ **book back question- b/b ,**
- ✓ **Government public question paper March20 – mar20**
- ✓ **Government public question paper instant 20 – inst20**
- ✓ **Government public question paper September 20- sep20**
- ✓ **Government public question paper August 21- aug 21**
- ✓ **Government public question paper May 22- may 22**
- ✓ **Government public question paper July 22- jul 22**
- ✓ **This material based on the previous year government public question paper and PTA question paper , monthly exam question paper, old question papers , Revision question paper and book back questions.**
- ✓ **My hearties wishes to the students for scoring high marks in the examination**

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# 12th CHEMISTRY QUESTION BANK VOLUME-I

## VOLUME-I
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## 12th CHEMISTRY QUESTION BANK VOLUME-I

# 1.METALLURGY

### MORE IMPORTANT QUESTIONS :-

1. **Explain froth flotation process ( in.p.no.4) (aug21)**

2. **What are the difference between minerals and ores( inst20)(may22)(b/b: 1)**

3. **Describe mond process for refining nickel. (may 22)( b/b - 5 )**

4. **Explain zone refining process with an example(mar 20) ( b/b - 6 )**

5. Explain refining of titanium by van-arkel method ( In.p.no :17 )

6. Give the limitation of elingham diagram.(b/b-16)

7. **Write a note on gravity separation method ? (may 22) (in.p.no :**

8. **Explain Acid leaching with an example (jul 22)**

9. **Explain the principle of electrolytic refining with an example (jul 22)**

10. **What is the role of limestone in the extraction of iron from its oxide $Fe_2O_3$ (sep 20) (b/b : 3)**

11. **which type of ores can be concentrated by froth flotation method give two example (sep 20) (b/b : 4)**

12. **Explain the following terms with suitable example ( inst 20) (b/b : 10)**
    **I) Gangue.    II) slag**

13. What is auto-reduction ? give example.( In.p.no : 10 )

14. Explain concentration by magnetic separation with diagram. ( In.p.no : 6 )

15. explain electrochemical extraction of aluminium-hall-herold process (In.p.no:14)

### OTHER IMPORTANT QUESTIONS :-

1. Write notes on calcination with an example( In.p.no : 7 )

2. What is meant by roasting ? give one example( In.p.no :6 )

3. Write the formula for following ore
   i) Calamine  ii) Galena iii) Haematite  iv) copper pyrite ( In.p.no :  3 )

4. Write a notes on alkali leaching process.( In.p.no :  5 )

5. What is meant by concentration.( In.p.no :  3 )

6. Explain about cynide leaching . ( In.p.no :   4 )

7. How to electrolytic refining of silver ? ( In.p.no :  115 )

8. What is the role of sodium cyanide in froth floation( b/b –12iv )

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9. What is called smelting ? How is copper extracted from its ore by this method ?( In.p.no :8 )

10. What is cementation?. ( In.p.no : 5 )

11. What is Elingham diagram ? (In.p.no : 12 )

12. Write the two application of aluminium. (In.p.no : 17 )

13. Give the uses of zinc ? (b/b- 9 )

14. Out of coke and CO which is better reducing agent for the reduction of ZnO ? Why? (b/b- 5 )

15. Name the collector and depressing agent used in froth flotation process ( In.p.no : 8 )

16. In the metallurgy roasting of ore is done below its melting points whereas smelting is done    above its melting point. Why ? see Pta answer

17. Explain the principle of electrolytic refining with an example b/b -13

18. What are the various steps involved in extraction of pure metals from their ores ? (b/b : 2)

19. Give the basic requirement for vapour base refining ? ( b/b - 11 )

20. what are the main observation of Elingham diagram? (In.p.no : 12 )

21. Write the condition for the following using elingham diagram  (b/b- 8 )
    i)    Reduction of magnesia by aluminium
    ii)    Is it possible to reduce $Fe_2O_3$ using carbon

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

23. How  Cr2O3 is reduced to Cr by Al powder (In.p.no : 10 )

24. Write a note on blister copper ? (In.p.no : 9 )

25. Explain the electro metallurgy of aluminium (b/b- 10 )

26. The selection of reducing agent depends on the thermodynamics factor. Explain with example (b/b- 15 )

27. Write a short note on alumina thermic process ? (In.p.no : 9 )

28. How is metal purified by distillation method ? give example (In.p.no : 15)

29. What is chemical leaching ? or cyanide leaching (In.p.no : 4)

30. Explain the reduction of metal oxide in different method ? (in.p.no : 8)

31. CO is a reducing agent .justify with an example (In.p.no : 10 )

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# 2.P-BLOCK ELEMENTS-I

## MORE IMPORTANT QUESTIONS :-

1.Give the uses of silicone ( b/b -  7  ) &

   How are the silicones prepared? (In.p.no : 47   )

2. What is the action of heat on boric acid ?( In.p.no : 35    )

3.What is inert pair effect ? ( In.p.no : 30    )

4**.What is catenation ?**

  **describe briefly the catenation property of carbon  mar&inst 20 (b/b -4 )**

  **Write the conditions for catenation property ? (jul 22)**

**5.give the uses of borax .(b/b-3) (aug21)**

**6.How is potash alum prepared (sep 20) ( in.p.no : 40)**

7.How will you identify borate radical ? ( b/b -  13 )

**8.what are the factors responsible for the anomalous behaviour of first element of  the  p-block ? ( inst 20) aug21 ( B/B :1)**

**9.What is inert pair effect ? (may 22)**

**10.What are the uses of boric acid ? (may 22) (jul 22)**

11.Mention the uses of potash alum. (In.p.no : 40  )

12.How do you prepare $AlCl_3$ by Me-Afee process. (In.p.no : 39  )

13.How will you prepare inorganic benzene ?or borazole or borazine(In.p.no:37)

  ( OR )complete the following reaction (In.p.no :  37 )

  i) $B_2H_6 + NH_3 \rightarrow$?

  Draw the structure of inorganic benzene and diborane (In.p.no : 37   )

14.Write a note on Fisher tropsch synthesis.  (b/b- 6  )

15.Describe the structure of diborane.  (b/b- 10  )

16.Draw the structure of CO and $CO_2$   (b/b- 7  )

17. How will silicate classified ? Give an example for each type of silicate ?

  (In.p.no : 48   )

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### OTHER IMPORTANT QUESTIONS :-

1. **A hydride of second period alkali metal (A) on reaction with compound of boron B in the presence of ether to give a reducing agent C . Identify A B and c(sep 20) ( B/ B : 18) (compulsory 2 mark )**

2. **there is only marginal difference in decrease in ionisation enthalpy from aluminium to thallium explain Why ? (mar 20) ( in.p.no : 29 ) (compulsory 3 mark )**

3. What is burnt Alum ? and uses of alum ( In.p.no : 40 )

4. How will you convert boric acid to boron nitride ? ( b/b - 15 )

5. Give one example for each of the following ( b/b - 10 )
   I) icosogens ii) tetragen iii) pnictogen iv) chalcogen

6. Write a note on metallic nature of p block elements ? ( b/b - 11 )

7. Write a short note on hydroboration (b/b- 11 )

8. Compare the stability of $AlCl_3$ and $TlCl_3$ (In.p.no : 30 )

9. Write a short note on fullerene ( in.p.no : 42)

10. Comlete the following reaction. (b/b-14 )
    i) $Na_2B_2O_7 + H_2SO_4 + H_2O \rightarrow$ ?      ii) $SiCl_4 + NH_3 \rightarrow$ ?

11. What are amphiboles? Give example

12. Write the short note on carbon nanotubes ( In.p.no : 42 )

13. How is borax extracted from colemanite ?( In.p.no : 33 )

14. Although graphite and diamond are allotropes of carbon , graphite is soft whereas diamond is hard. Why ?( In.p.no : 41 )

15. Explain the equation for the basisty of boric acid( In.p.no : 34 )

16. How is diborne prepared ? ( In.p.no : 32 )

17. How will you prepare boric beads from borax ?(Borax bead test)(In.p.no:34)

18. Difference between diamond and graphite ( In.p.no: 41&42)

19. Given example for the following bonds containing molecules. (In.p.no :37 )
    a) 2c -2e bond b) 3c – 2e c) 3c – 4e

20. Explain the classification of inosilicates. (In.p.no : 49 )

21. $AlCl_3$ behave like lewis acid. Substantiate this statement. (b/b-9 )

22. Write a note on zeolites.write its general formula ? (In.p.no : 50 )

23. why boron compounds are covalent in nature ? (In.p.no :32 )

24. mention the uses of carbon monoxide ? (In.p.no : 44 )

25. what are producers gas ? (In.p.no : 43 ) 26. what are syn gas ? (In.p.no : 43 )

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# *3.P-BLOCK ELEMENTS-II*

**MORE IMPORTANT QUESTIONS :-**

1. what is inert pair effect ? ( b/b - 1 )
2. **Give the uses of helium( inst 20)aug 21 ( B/ B : 7) and argon b/b -15**
3. **What are inter halogens compounds ? (may 22)**
   **mention their properties ( In.p.no : 89)**
4. **What are interhalogen compounds ? give two examples (B/B-5) (aug 21)**
5. **How is bleaching powder prepared ? Mar 2020 (may 22) (in.p.No : 85)**
6. **Write the balanced equation for the overall reaction of chlorine with cold NaOH and hot NaOH( inst 20) ( B/ B : 9 )**
7. **What are the uses of oxygen ? (may 22) (in.p.no: 75 )**
8. **Give the uses of argon (jul 22) (b/b- 15 )**
9. **Write the properties of inter halogen compounds (jul 22) (in.p.no: 89 )**
10. **<span style="color:red">Powdered $CaCO_3$ reacts much faster with dilute HCl than with the same mass of $CaCO_3$ as marble give Reason ? (sep 20) ( in.p.no : 86) (compulsory 3 mark )</span>**
11. **Sulphuric acid dibasic acid prove it(sep 20)( in.p.no : 78)**
12. **Write a short note on Holmes signal( inst 20)( in.p.no : 70)**
13. **HF can't be stored in glass bottle (mar 20)( in.p.no : 88)**
14. What is royal water ? or Aquaregia what is its use ? (in.p.no: 86 & 87 )
    Write the Action of aquaregia on gold ?
15. Explain the dehydrating property of sulphuric acid with suitable example(in.p.no: 12 )
16. **explain the Deacons's process for manufacture of chlorine(sep20)p.no:83**
17. What are the hybridisation of ion in $IF_7$ ?Give its structure. ( b/b –8)
18. How will you prepare chlorine in the laboratory ? ( b/b - 10 )
19. Write the reason for the anamolous behaviour of nitrogen b/b-13
20. Explain why fluorine always exhibit an oxidation state of -1 ? ( b/b - 3 )
21. Writethedifference between red phosphorus and whitephosphorus(in.p.no:67 )
22. explaine the structure of ammonia (in.p.no : 60 )
23. Explain the commercial method of preparation of nitric acid ? (in.p.no: 61 )
24. How is pure phosphine prepared ? (in.p.no: 69 )
25. Complete the following reaction ? (In.p.no : 60 )
    i) $NH_3$(excess) + $Cl_2 \rightarrow$ ?       ii) i) $NH_3$ + $Cl_2$(excess) $\rightarrow$ ?

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### *OTHER IMPORTANT QUESTIONS :-*

**1.write the molecular formula and draw the structure of sulphurous acid marshals acid  (mar 20) ( in.p.no ; 80,81 )**

**2. What type of hybridization is found in the following (sep 20)**
**  I) BrF.   Ii)  BrF₅.    Iii) BrF₃.  ( B/B : 22)**

**3.explain the bleaching action of Sulphur dioxide.(in.p.no.77) (aug 21)**
**And reducing property**

4 Ozone (O₃) act as a powerful oxidizing agent prove it ( In.p.no : 75    )

5. complete the following reaction

   $XeOF_4 + SiO_2 \rightarrow$ ?b/b – 23(12)

 6.Draw the following compounds

    i) pyrophospheric acid  ii) phosphorous pentaoxide( In.p.no : 72)

7.$P_4 + NaOH + H_2O \rightarrow$? In.p.no :68  )

8.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

9.Give reasons : ICl is more reactive than $I_2$   . See PTA answer

10.What is the reaction of ammonia with iron and copper salts ?( In.p.no : 60    )

11.Write the structure ozone. (In.p.no : 74  )

12.Nitrogen does not form any penta halides like phosphorus.Why?  See PTA
    answer

13.List any five compounds of xenon and  flourinemention the type of
     hybridisation and structure of the compounds.  ( In.p.no :  93   )

14.What are the bleaching action and oxidizing nature of chlorine  with suitable
      example .  ( In.p.no :  85   )

15.Why is Flurine more reactive than other halogens ?   ( b/b -  6  )

16.Write a short note on allotrophic forms of sulphur ?  ( In.p.no :   75  )

17. How is ammonia prepared in laboratory ?( In.p.no :   58  )

18. What is called phosphorescene?( In.p.no : 67    )

19. How is ammonia prepared from nitrogen by haber's process ?( In.p.no: 58)

20.Suggest a reason why HF is a weak acid , whereas binary acids of the all other
     halogens are strong acids.(b/b- 20 )

21.Write about the reducing property of phosphine ? (in.p.no: 89  )

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22.Explain the bleaching action and oxidizing nature of chlorine with suitable example (in.p.no:  85 )

23.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  )

24.Chalcogen belongs to p-block . Give reasons (b/b- 2

25.$SO_2$ is a reduction agent prove it (In.p.no : 77)

26.Give any two uses of nitrogen (In.p.no : 58 )

27. Complete the following reactions.

   i)     $Mg_3N_2 + H_2O \rightarrow$?   (in.p.no : 59)

   ii)    $P_4 + NaOH + H_2O \rightarrow$ ?     (b/b-23(5))

   iii)   $KClO_3 \xrightarrow{\quad MnO_2 \quad \Delta \quad}$ ? (b/b-23(8))

   iv)   $SO_2 + O_2 \xrightarrow{\quad V_2O5 \quad \Delta \quad}$ ? (in.p.no : 77)

   v)    $XeF_2 + H_2O \rightarrow$ ?     (b/b-23(12))

   v) $Xe + F_2 \xrightarrow{\quad Ni / 200 \; atm \; 400^0 \; c \quad}$ ? (b/b-23 (15)
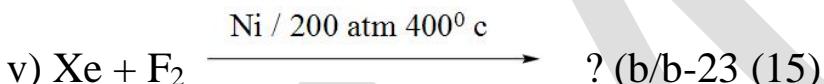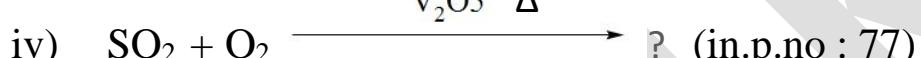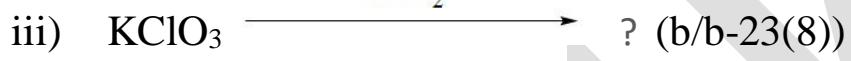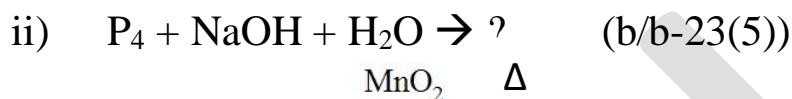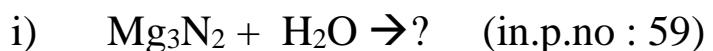
28.Write the valence shell electronic configuration of group -15 elements ?
(b/b-16)

29.What happens when $PCl_5$ (b/b-19)

30.Give the oxidation state of halogen in the following ( b/b-4)

  a) $OF_2$ b) $O_2F_2$ c) $Cl_2O_3$ d) $I_2O_4$

31.What is the action of copper with dil  $HNO_3$ and Con.$HNO_3$ ? (In.p.no : 63)

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## 4.TRANSITION ELEMENTS AND INNER TRANSITION ELEMENTS

### MORE IMPORTANT QUESTIONS :-

1. Transition metals show high melting points why? ( b/b - 27 )

2. **Calculate the number of unpaired electrons in $Ti^{3+}$, $Mn^{2+}$ and calculate the spin only magnatic moments? ( b/b - 10 )aug 21**

3. **Compare the properties of lanthanides and actinides. (jul 22) ( b/b - 15 )**

4. **Out of $Lu(OH)_3$ and $La(OH)_3$ which is more basic and why ?( b/b - 19 )**

5. **What is lanthanide or lanthanoide contraction explain its consequences (sep 20) (B/B :7)**

6. **What are interstitial compounds( inst 20) ( B/B : 9) (aug 21)**

7. **why d block elements exhibit variable oxidation state?(In.p.no:106)(aug21)**

8. Why transition elements form complexs ? ( In.p.no : 112 )

9. Why do transition elements form alloy ? example (In.p.no : 111 ) (OR) Explain hume -rotheryrule for formation of alloys?

10. **Which is more stable $Fe^{2+}$ and $Fe^{3+}$ ? why ? (may 22)**

11. **What are the properties of interstitial compounds ? (may 22)**

12. **Write a note on zeigler –Natta catalysis .Give its use (jul 22)**
   **a).what is zeiglar-Nata catalyst ? in which reaction it is used ? give equation.( In.p.no : 111 )**

13. **Write chromyl chloride test (mar 20)( in.p.no : 114)**

14. Why do transition elements and its compound act as catalyst? ( In.p.no :110 )

15. whyeuropium(II) is more stable than cerium (II) ? ( b/ b - 20 )

16. Mention the uses of potassium permanganate and potassium dichromate (In.p.no 118 &114 )

17. Describe the preparation of $KMnO_4$ (In.p.no : 115)

18. Describe the preparation of $K_2Cr_2O_7$ (b/b-8)

19. What is bayer's reagent ? (In.p.no -117)

20. $KMnO_4 \xrightarrow{\text{heat}}$ (b/b-10)

21. Just be the position of lanthanide and actinide in the periodic table(b/ b - 4)

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### *OTHER IMPORTANT QUESTIONS :-*

**1. Classify the following elements into d block and f block elements. Mar20**
   a) tungston.  b) ruthenium c) promethium. d) einsteinium ( in.p.no : 101)

**2. which metal in the 3d series exhibits + 1 oxidation State most frequently and  why ? ( inst 20) ( B/B : 25)**

3. Explain why $Cr^{3+}$ is strongly reducing while $Mn^{3+}$ is strongly oxidizing. b/b- 16

4. why first ionization enthalpy of chromium is lower than that of zinc ? (b/ b -26)

5. A substance is found to  have a magnetic moment of 3.9 BM . how Many unpaired electrons     does it contain ? ( In.p.no : 110  )

6. Why do zirconium and hafnium exhibit similar properties ? ( b/ b -  21   )

7. Why $Mn^{2+}$  is more stable than $Mn^{3+}$ ( In.p.no :  107 )

8. Which is more stable among $Fe^{3+}$ and $Fe^{2+}$ ? why ?   ( b/ b - 13   )

9. i) What are inner transition elements?   ( b/ b - 3   )
   ii) What is meant by transitionelements ( b/ b -  1  )

10. Describe the variable oxidation state of 3d series elements.   ( b/ b - 24   )

11. Explain the atomic radius of d- block elements ? (in.p. no : 104)

12. Write the electronic configuration of lanthanide and actinide
    ( In.p.no:119 & 122 )

13. What are  actinide ? give three example  ( b/ b -  5  )

14. Which is stronger reducing agent $Cr^{2+}$ or $Fe^{2+}$ ?  ( b/ b - 22   )

15. Calculate the equivalent weight of $KMnO_4$ In the following reactions. p.no:118
    a) $MnO_4 + 2H_2O + 3e- \rightarrow MnO^2 + 4OH^-$
    b) $2MnO_4 + 10Fe^{2+} + 16H^+ \rightarrow 2Mn^{2+} + 10Fe^{3+} + 8H_2O$

16. Give any two evidence for the oxidising nature of potassium dichromate?
    (in.p.no: 113)

17. what is action of heat on $K_2Cr_2O_7$ ? (in.p.no: 113)

18. what is action of heat on $KMnO_4$  ? (in.p.no: 116)

19. Which is stronger reducing agent $Cr^{2+}$ or $Fe^{2+}$ ?
    [$E^0cr^{2+}/cr$ =-0.91 v . [$E^0Fe^{2+}/$ Fe =-0.44v ] (b/b-24)

20. Give brief account on the oxidation state of lanthanide ? (In.p.no : 120 )

22. The first ionisation energy of chromium is less than that of zinc why?(b/b-29 )

23. Why do 3d transition element posesess variable oxidation state ? (b/b-28 )

24. Write the electronic configuration of $Ce^{4+}$ and $Co^{2+}$ ? ( b/b -13)

25. explain the oxidation state of 3dlements ? (in.p.no 106)

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# 5.COORDINATION CHEMISTRY

## *MORE IMPORTANT QUESTIONS :-*

**1.Give the difference between double salt and coordination compound**
      **(sep 20) (aug 21) (B/B : 13)**

**2. write the postulates of werner's theory ( inst 20) (may 22) ( B/B : 14)**

**3.what are the limitation of VB theory ? (B/B-24).  (jul 22)  (aug 21)**

**4.based on the VB theory ,explain why$[Ni(CN)_4]^{2-}$ it is diamagnetic.**
**(In.p.no.150)    (aug 21)**

5. i)What is crystal  fielding splitting energy ? ( b/b-23  )

   ii) What is crystal field stabilization energy ? (CFSE)  ( b/b-24  )

   ii)What is d-d transition ?  (In.p.no : 160 )

6.$[Ni(CO)_4]$  diamagnetic , explain using VB theory ( In.p.no : 149  )

7.$[Fe(CN)_6]^{3-}$ paramagnetic , explain using VBtheory ( In.p.no : 150  )

**8.Calculate the magnetic moment and magnetic property of $[CoF_6]^{3-}$(mar20)**
    **( in.p.no : 151)**

9.$K_4[Fe(CN)_6]$ Identify the i) central metal ion , oxidation number ii) ligand
    iii) co-ordination number        iv) type of complex v) ligand name and nature
    of the ligand vi) magnetic property and IUPAC name. (In.p.no -138)

**10.Define Coordination number (may 22) (In.p.no :134)**

<span style="color:red">**11.Write the following for the complex $[Ag(NH_3)_2]^+$  (may 22) (In.p.no :140 )**
    **a)ligand b) central metal ion c) IUPAC name  (may 22)(compulsory 3 mark )**</span>

**12.Write the IUPAC ligand name for the following (jul 22) (In.p.no :137  )**
    **a) $C_2O_4^{2-}$      b) $H_2O$   c) $Cl^-$**

**13.write any two hydrate isomers of the complex with the molecular**
    **formula $CrCl_3$ $6H_2O$ (mar 20)( in.p.no : 143)**

**14.$[Sc(H_2O)_6]^{3+}$ is colourless explain (mar 20) ( B/B : 10 )**

15.In an octahedral crystal field draw the figure to show splitting of d orbitals
    ( B/B ; 13)

**16.Indicate the possible type of isomerism for the following complexes**
    **(sep 20) a)$[Co(en)_3]^{3+}$( in.p.no : 146)b).$[Pt(NH_3)_2Cl_2]^{2+.}$  ( in.p.no : 143)**

**17.mention the metal complex and its metal ions are used in**
    **biological system ( inst 20) ( in.p.no : 167 )**

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18. What are the inert and labile complex ? (In.p.no :163  )

19. What is stability constant? Mention its significance at . (In.p.no :163 )

20. In tetrahedral field draw the figure to show splitting of d orbitals(In.p.no:155)

21. Write any two medicinal uses of co-ordination compounds (In.p.no :166  )

22. Expl;ain the bonding nature in metal carbonyl.  ( b/b- 26  )

23. What are ionisation isomers ? with an example (In.p.no :142  )

24.  i) What is mac-arthur-forrest cyanide process? (In.p.no : 166  )

   ii) What is wilkinsons catalyst ? (In.p.no : 166  )

## OTHER IMPORTANT QUESTIONS :-

1. What is strong field ligand ? (In.p.no : 149)

2. **Write the IUPAC name of the following ( in.p.no : 140 )**

   **I) $[Ag(NH_3)_2]^+$(mar 20)     ii).$[Co(NH_3)_5Cl]^{2+}$(mar 20)**

 iii ) $[ Co(en)_2Cl_2]Cl$ (in.p.no : 140) Iv) $[ Ag(CN)_2]$v)    $[ Co(en)_3]_2 (SO_4)_3$.(B/B-1)

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 - 9)

4. A solution of $[Ni(H_2O)_4]^{2+}$ is green. Where as a solution of is $[Ni(CN)_4]^{2-}$

   colourless. Explain  ( b/ b -  20   )

5. $[Ni(CN)_4]^{2-}$ is diamagnetic , while $[NiCl_4]^{2-}$ is paramagnetic explain. ( b/b-19  )

6. Write the IUPAC names for the following compounds

$[Pt(NH_3)_2Cl(NO_2)]$

i) $K_4[Fe(CN)_6]$  ii)  $Na_2[Ni(EDTA)$  iii) $[Co (CN)_2(Cl)_2]Cl$  ( b/ b - 1 )

iv) $[Co(en)_2Cl_2]Cl$  v) $[Co(ONO)(NH_3)_5]^{2+}$ vi) $[Co(en)_3]SO_4$

7. $[Ti(H_2O)_6]^{3+}$ is coloured, while $[Sc(H_2O)_6]^{3+}$ is colourless explain ( b/ b -7)

8. Based on VB theory explain why $[Cr(NH_3)_6]^{3+}$ is paramagnetic,

while$[Ni(CN)_4]^{2-}$ is  diamagnetic.   ( b/ b -5    )

9.   What is coordination sphere ?( In.p.no : 134  )

10. $[Co(NH_3)_4Cl_2]Cl$ Identify the  i) central metal ion ii) ligand

   iii) co-ordination number        iv)  type of complex  v) ligand name and nature

    of the ligand vi) magnetic property and IUPACname.   (In.p.no : 139)

11. What is linkage isomerism . explain with an example (In.p.no :142  )

12. .Write the postulates of crystal field theory ? (In.p.no : 153 )

13. Write note on co-ordination isomerism ? (In.p.no : 142 )

14. What is optical isomerism ? with example . (In.p.no :146  )

# 12th CHEMISTRY QUESTION BANK VOLUME-I

15. What is the coordination in entity formed when excess of liquid ammonia is added to an aqua solution of copper sulphate. (b/b- 27)

16. Write the formula for the following coordination compounds (b/b- 2)

    I) potassiumhexacyanidoferrate(II)

    ii) tetracarbonyl nickel(0)

    iii) hexafluridoferrate(II)ions

    iv) hexaminecobalt(III) sulphate

17. Mention the main assumption of valence bond theory coordination compounds.(In.p.no :147)

18. In the complex $[Co(C_2O_4)_3]^{3-}$ on the basis of vb theory explain the nature of bonding ( b/b-23)

19. What are hydrate isomers ? explain with an example. ( b/b- 22 )

20. Write the salient feature of CFT (In.p.no : 153 )

21. The mean pairing energy and octralhedral splitting energy of $[Mn(CN)_6]^{3-}$ are 28000 cm-1 and 38500 cm-1 respectively whether this complex is stable in low or high spin ? (In.p.no : 142 )

22. For $[Fe(H_2O)_6]^{6+}$ ion the magnitude of octrahedral field splitting energy is 14,000 cm-1 the mean pairing energy is 30,000 cm-1 then calculate CFSE for law spin complex of the above complex. (In.p.no :134  )

## 12th CHEMISTRY QUESTION BANK VOLUME-I

# 6.SOLID STATE

### MORE IMPORTANT QUESTIONS :-

**1. Write a note on frenkel defect (mar 20) (jul 22) (B/B : 24 )**

**2.differentiate between crystalline solid and amorphous solid (sep 20) (may 22) ( B/B : 3 )**

**3.Distinguish between isotropy and anisotropy in solids(inst20)(in.p.no:178)**

**4.Explain Schottky defect( inst 20) ( B/B : 9 )**

**5.Define unit cell  (B/B-1) (aug 21).**

6.What are the characteristics of Ionic solids? ( b/ b - 2   )

7.Define crystal lattice ( in.p.no : 180)

**8.Define covalent solids(may 22)**

**9.Define unit cell  (jul 22)**

**10.What is packing efficiency ? (jul 22)**

11.Distinguish between hexagonal close packing and cubic close packing (b/b-6)

12.Write any three difference between tetrahedral and Octahedral voids(b/b-7)

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

14.Write the short note on the metal deficiency defect and metal excess defect with example.( b/ b - 10  )

15.Write the short note on the impurity defect in crystal (in.p.no : 195)

16. calculate the percentage efficiency of packing in case of body centered cubic Crycrystal (b/ b -  14   )And SC ( In.p.no : 187  ) and FCC (in.p.no :  192)

### OTHER IMPORTANT QUESTIONS :-

1.Explain briefly seven types of unit cell. ( In.p.no :  181 )

2. Explain f centres with a neat diagram ( In.p.no :  194 )

3. What are primitive and non primitive unit cell ( In.p.no : 181  )

4. How are point defectclassified ? ( In.p.no :  193 )

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

**6.What is mean by term coordination number? What is the coordination number of atom in a BCC structure? (B/B-16). (aug 21)**

## *12th CHEMISTRY QUESTION BANK VOLUME-I*

**7.If the Radius ratio of the compound is between 0.155 to 0.225 find out the coordination number and structure of the compound.(sep20) (in.p.no:192)**

**8.Glassify the following into Covalent molecular ionic and metallic solids (B/B-4) (aug 21)( compulsory 3 mark)**

   **i) Diamond ii) brass iii) Nacl iv) Naphthalene v) glucose vi) $SiO_2$ vii)$P_4$ viii) Brass ix) Iodine**

**9. If the th number of close packed sphere is 6 calculate the number of octahedral voids and tetrahedral voids generated (mar 20)( in.p.no :190 )**

10.Sketch Face centred cubic unit cell (FCC) and calculatethe number of atoms present crystal-( b/ b - 11    )And BCC-   and SC -( In.p.no :   183)

11.Why ionic crystal are hard and brittle  ( b/ b - 13    )

12. Classify molecular crystal with a example for eachtype.( In.p.no :   179 )

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

14.explain AAAA and ABABA and ABABC type of three dimensional packing with the help of neat diagram ? (b/b-12)

15. Derive the equation for density of unit cell( In.p.no : 184  )

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

17.Atom x is present at the corners of the cube and atom Y Iis at the centre of the cube in bcc crystalline structure . what is formula of the compound (b/b-23)

18.An atom crystallizes in FCC crystal lattice and has a density of 10gcm-3 with unit cell edge 100pm .calculate the number of atoms  present in 1 g of crystal(b/b-22)

19.A face centred cubic solid of an element (atom masss60) has a cube edge of $4A^0$ calculate its density       (In.p.no :186 )

20.Barium has a body centred cubic unit cell with a length of 508pm along an edge . what is density of barium in g cm-1       (In.p.no :185 )

21.Imperfections in solid play an important role in various is process justify (In.p.no :192&193 )

22.KF crystallizes in fcc crystal structure like sodium chloride . calculate the distance between $K^+$ and $F^-$ in KF ( given : density of KF is 2.48 g cm$^{-3}$) (b/b-21)

*12th CHEMISTRY QUESTION BANK VOLUME-I*

# 7.CHEMICAL KINETICS

*MORE IMPORTANT QUESTIONS :-*

**1.Derive integrated rate law for a first order reaction A →product (mar 20) ( in.p.no : 212. )**

**2.the rate constant for a first order reaction is $1.54 \times 10^{-3}$ $s^{-1}$ . calculate its half life time (sep 20) ( b/b- 23 )**

**3.Write Arrhenius equation and explain the terms involved (may22)(b/b-14)**

**4.write two difference between rate and rate constant of a reaction (in.p.no: 209) (aug 21)**

**5.derive integrated rate law for a zero order reaction A→ product. (B/B-3). (aug 21) (jul 22)**

6.Define rate law and rate constant ( b/ b - 2 )

7. what is an elementary reaction ? Give the difference between order and molecularity of a reaction ( b/ b - 5 )

**8.Explain the effect of catalyst on reaction rate with an example (inst20)(B/B :9)**

**9. i) Give examples for the first order reactions. (may 22) (in.p.no : 213)**
 ii) Give three examples for zero order reaction( b/ b - 16 )

**10.Define order and molecularity of a reaction (jul 22) (in.p.no : 210)**

11.Describe the graphical representation of first order reaction (b/b-7)

**12.Mention the factors affecting the rate of the reaction (in.p.no : 222)**

## 12th CHEMISTRY QUESTION BANK VOLUME-I

### OTHER IMPORTANT QUESTIONS :-

**1. The rate of the reaction. x + 2y → product is 4 x $10^{-3}$ mol L $^{-1}$ s $^{-1}$ if [x] =[y]=0.2M and rate constant at 400k is 2 x $10^{-3}$ s $^{-1}$ what is the overall order of the reaction ? (inst 20) ( in.p.no : 211)**

2. Define order of reaction ? ( In.p.no : 210 )

3. What is activation energy ? ( In.p.no : 220 )

4. Draw the orientation of reactants- schematic representation?(in.p.no : 219)

5. What is pseudo first order reaction? Give an example. ( b/ b - 17 )

6. Show that in case of first order reaction , the time required for 99.9% completion is nearlyten times the time required for half completion of the reaction( In.p.no : 217 )

7. Explain the rate determininig step with an example.( b/ b - 6 )

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

9. Show that the half life period of a zero order reaction is directly proportional to the initial concentration of the reaction.( In.p.no : 216 )

10. A first order reaction takes 8 hours for 90 % completion calculate the time required for 80 % completion. ( In.p.no : 216 )

11. Define average rate and instantaneous rate( In.p.no : ) ( b/ b - 1 )

12. For a reaction X + y + z→ products the rate law is given by rate k = $[x]^{3/2}$ $[y]^{1/2}$ what is the overall order of reaction and what is the order of reaction with respect to Z ( b/ b - 12 )

13. Identify the order for the following reactions. ( b/ b - 18 )

   I) rusting of iron

   ii) radioactive disintegration of $_{92}U^{238}$  iii)2A + 3B →products ; K $[A]^{1/2}$ $[B]^2$

14. Explain briefly the collision theory of bimolecular reaction ( b/ b - 13)

15. How do concentration of the reactant influence the rate of reaction. ( b/ b-21 )

16. Derive Arrhenius equation to calculate Ea from rate constants $k_1$ and $k_2$ at temperature $T_1$ and $T_2$ (in.p.no : 220)

*S.MANIKANDAN.,M.,Sc.,B.Ed., PG ASST IN CHEMISTRY        7708543401    Page 19*

## 12th CHEMISTRY QUESTION BANK VOLUME-I

17. 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)

18. A zero order reaction is 20% completein 20 minutes. Calculate the value of the rate constant. In what time will thereaction be 80% complete? (b/b-26)

*Note :* →*The purpose of this material created is for students to get high marks and pass*

→ *If you have any doubts about this material or you can contact me to give your Valuable comments*

*Maybe any comments :*

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"Life is nothing without chemistry

All are made up of atoms and molecules"



Trees make the environment clean and provide us with oxygen. They are necessary for the elixir of life.

# 12th CHEMISTRY

# FULL PORTION

# VOLUME -II

# IMPORTANT QUESTIONS

# BY

# S.MANIKANDAN.,M.Sc.,B.Ed.,

# 7708543401

# *12 th CHEMISTRY QUESTION BANK  VOLUME- 2*

## Note :

- ✓ **every book back question is very important in every lessons**
- ✓ **Naming reaction is very important in unit-11,12,13**
- ✓ **Every government public question is very important. So compulsory study well**
- ✓ **Bold question is public question  in the material**
- ✓ **Interior page number- in.p.no,**
- ✓ ** book back question- b/b ,**
- ✓ **Government public question paper March20 – mar20**
- ✓ **Government public question paper instant 20 – inst20**
- ✓ **Government public question paper September 20- sep20**
- ✓ **Government public question paper August 21- aug 21**
- ✓ **Government public question paper may 22- may 22**
- ✓ **Government public question paper july 22-  july22**
- ✓ **This material based on the previous year government public  question paper and PTA question paper , monthly exam question paper, old question papers , Revision question paper and book back questions.**
- ✓ **My hearties wishes to the students for scoring high marks in the examination**

**S.MANIKANDAN.,M.Sc.,B.Ed.,**

**7708543401**

# *12 th CHEMISTRY QUESTION BANK  VOLUME- 2*

## VOLUME-II

## CONTENTS

## 12 th CHEMISTRY QUESTION BANK  VOLUME- 2

## 8.IONIC EQUILIBRIUM

### MORE IMPORTANT QUESTIONS :-

**1. Derive henderson equation (mar 20) ( in.p.no : 18. )**

**2.Define buffer action (sep 20) ( in.p.no : 16 )**

**3.Define common ion effect (sep 20) (May22)  (B/B : 11) with example**

**4.Derive an expression for ostwald dilution law (sep 20) (B/B : 12) (only law)  (aug 21)**

**5.Define ionic product of water .Give its value at room temperature ( inst20)  ( B/B : 10)**

**6.what are Lewis acid and bases give one example for each (mar 20) (jul 22)  ( B/ B : 1)**

**7.Define $p^H$  (b/b -  13)  (May22)**

8.Define solubility product.    (b/b -9   )

9.Write the expression for the solubility product of $Hg_2Cl_2$  and $Ca_3(PO_4)_2$  (b/b- 24 &20)

10.What is buffer solution ? .Mentions the two type of buffer solution.  (In.p.no : 16  )

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

12. Derive the Relation between $P^H$  and $P^{OH}$ (In.p.no :  9)

**13.What are the limitations of Arrhenius concept ? (May22)(jul 22)(p.no:3 )**

**14.What is buffer solution ? Give an example  (jul 22) (in.p.no :16  )**

**15. Calculate the pH of 0.1 MCH$_3$COONa solution ($_p$kafor CH$_3$COOH is 4.74  ( inst 20)( in.p.no : 24)**

16.What is buffer capacity ? what is buffer index$_{(\beta)}$ ? (in.p.no : 18 )

17. What is salt hydrolysis ? (in.p.no :21  )

18.Derive an expression for the hydrolysis constant and degree of hydrolysis of  Salt of strong acid and base ( b/b- 18 )

## *12 th CHEMISTRY QUESTION BANK VOLUME- 2*

### *ANOTHER IMPORTANT QUESTIONS :-*

**1.Write the pH value of following substance (mar 20) ( in.p.no : 10. )**
   a).Vinegar    b).black coffee.   C). packing soda s   d).oapy water

**2..Identify the conjugate acid base pair for the following reaction in aqueous solution (sep 20) (B/B : 3)**

   $HS^- (aq) + HF$ ⇌ $F^- (aq) + H_2S(aq)$
   $HPO_4^{2-} + SO_3^{2-}.$ ⇌ $PO_4^{3-} + HSO_3^-$
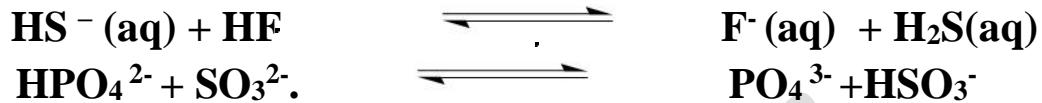
**3.Glassify the following into Lewis acid and Lewis bases( inst 20)(in.p.no : 5)**
   (A) $BF_3$    (B) $CO_2$    (C) $MgO$    (D) $CH_3$

**4.find the pH of buffer solution containing 0.20 mole per litre sodium acetate and 0.18 mole per litre acetic acid .$K_a$ for acetic acid is  1.8 X 10^{-5}. M7(In.p.no.19)  (aug 21)**

5.The Ka value for HCN is $10^{-9}$ .what is the $P^H$ of 0.4M HCN solution.(b/b-16)

6. Write the relation between ionic product and solubility product (In.p.no : 25  )

7. Difference between Lewis acid and Lewis bases (In.p.no :  5)

8. What are conjugate acid base pair give an example ?(In.p.no : 3 )

9. Write the expression for the solubility product of. (In.p.no :  26)
        i) $BaSO_4$ ii) $Ag_2CrO_4$

10.calculate the $P^H$ of 1.5 x $10^{-3}$ m solution of $Ba(OH)_2$.    (b/b -14 )

11. Explain the buffer action of acidic buffer(In.p.no :16  )

12. Determination of solubility product from molarsolubility (In.p.no : 26  )

13. Glass with the following as acid or base using Arrheniusconcept (In.p.no :3  )
    I) $HNO_3$   ii) $Ba(OH)_2$   iii) $H_3PO_4$  iv) $CH_3COOH$

14. Identify the conjugated acid base pairs of following equation in water with write the  difference equation. (In.p.no : 4)
                 I) $NH^{4+}$  ii) $H_2SO_4$  iii) $CH_3COOH$

15.calculate $P^H$ of $10^{-8} H_2SO_4$(In.p.no : 12 )

16.ksp  of $Ag_2CrO_4$ is 1.1 X $10^{-12}$ what is the solubility of $Ag_2CrO_4$ in 0.1M $K_2CrO_4$ ?   ( b/b-25  )

17.Calculate Pkb of $NH_4OH$ , if the ph of a buffer solution containing 0.1N $NH_4OH$ and 0.1M $NH_4Cl$ is 9.25

18.Identify the conjugate acid base pair for the following reaction in aqueous solution ? (b/b-3)

## 12 th CHEMISTRY QUESTION BANK  VOLUME- 2

i)$HS^-$ (aq) + HF $\rightleftharpoons$ $F^-$(aq) + $H_2S$(aq)

iii)$NH_4^+$ + $CO_3^{2-}$ $\rightleftharpoons$ $NH_3$ + $HCO_3^-$
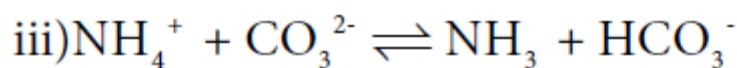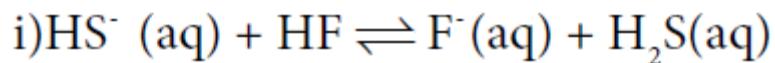
19. Calculate the concentration of [OH]$^-$ in a fruit juice which contains $2 \times 10^{-3}$
    [$H_3O$]$^+$ ion  Identify the natural solution (In.p.no : 8)

20. Write nature of solution possibility of precipitation for the following
    conditions (In.p.no : 125 )
    i) ionic product > Ksp. ii) ionic product < Ksp. iii) ionic product = Ksp

21.What is  the equation to find the PH of an acid buffer solution ?

$$pH = pK_a + \log \frac{[salt]}{[acid]}$$

22.Calculate the P$^H$ and P$^{OH}$ of 0.001 M HCl solution .ans : pH = 3 P$^{OH}$ = 11

23.Derive an expression for the hydrolysis constant and degree of hydrolysis
    Of   Salt of strong base and  weak acid  ( in.p.no : 21)

## *12 th CHEMISTRY QUESTION BANK  VOLUME- 2*

# 9.ELECTRO CHEMISTRY

## *MORE IMPORTANT QUESTIONS :-*

**1.Define equivalent conductance  (In.p.no : 37) (aug 21)**

**2.Mention any two factors that affect electrolytic conductance.p.no:3(aug21)**
   **What are the factors that affects electrolytic conductance ? (May22)**

**3.State faraday's law of electrolysis ? (B/B-5). (aug 21)**

**4.Derive an expression for Nernst equation( inst20)(May22)(jul22)(B/B :24 )**

**5.State kohlrausch law and explain any one of the application(sep20)(B/B:3)**

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

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

8.what is electrochemical equivalent ?  (In.p.no : 54 )

9.Define molar conductance and specific conductance (In.p.no : 36  )

10. What are the conversion used Galvanic cell notation ?  (In.p.no : 62)

11. Define anode and cathode    (b/b - 1)

12. Mention the three application of kohlrausch's law (in.p.no : 42,43)

13.A solution of silver nitrate is electrolysed for 20 minutes with a current of 2
   amperes. Calculate the mass of silver deposited at the cathode . (jul 22)
   (in,p.no; 55)

14.how are metals protected from corrosion by cathodic protection method
   (mar 20)( in.p.no : 61. )

15.What is intercalation ? (in.p.no :59)

16.Write a note on sacrificial production (b/b-25)

17.What is the role of salt bridge in Galvanic cell? (in.p.no :46 )

18.Explain lithium-ion battery and mercury button cell. (in.p.no : 57 )

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

20.Describe the construction of Daniel cell. Write the cell reaction. (b/b- 6 )

*12 th CHEMISTRY QUESTION BANK  VOLUME- 2*

*ANOTHER IMPORTANT QUESTIONS :-*

1.**A conductivity cell has two platinum electrodes separated by a distance of 1.5 cm and the cross sectional area of each electrode is 4.5 sq cm using this cell the resistance of 0.5 N electrolytic solution was   measured as 15 ohms find the specific conductance of the solution (mar 20) ( in.p.no : 35)**

2. i) **A  solution of silver nitrate is electrolysed for 30 minutes with a current of 2 Ampere calculate the mass of   silver deposited at the cathode. ( inst 20)  ( in.p.no : 55)(model) ( compulsory 2 mark)**

   ii) Write Debye-huckel and onsagar equation for a uni-univalent electrode ?

3. What is electrochemical series ? how is it useful to predict corrosion (In.p.no : 62 )

4.Write a note on Standard Hydrogen Electrode(SHE) (In.p.no : 48  )

5. What is cell constant give its unit ?(In.p.no : 35 )

6. What is molar conductivity ? (In.p.no :36  )

7. **A solution of silver nitrate is electrolysed for 20 minutes with a current of 2 ampere calculate the mass of silver deposited at the cathode. (In.p.no : 55  ) jul22 ( compulsory 3 mark)**

8. Describe the electrolysis of molten NaCl using inert eelectrodes. (b/b -4  )

9. Is it possible to to store copper sulphate in in an iron vessel for a long time Given  : $E^0_{Cu2+/Cu}= 0.34$ V and $E^0_{Fe2+/Fe} = 0.44$V (b/b - 15  )

10. Two metals  M1 and M2 have reduction potential values of  -x V and +yV respectively.

11.which will liberate $H_2$and$H_2SO_4$ ?  (b/b - 16)

12.Write a note on electrochemical mechanism of corrosion ? (in.p.no :60)

13.How is production of metals from corrosion ? (in.p.no :61)

14.Using the calculate emf value of zinc and copper electrode , calculate the emf Of the following cell at $25^0$C (in.p.no :49)

   $Zn(s) I Zn^{2+} {}_{(aq)}$    II     $Cu_{2+}$ (s)  I  Cu(s)

15.Is it possible to store copper sulphate in an iron vessel for a long time ? Given : $E^0 Cu^{2+}/Cu =0.34$v $E^0 Fe^{2+}/Fe = -0.44$ v ( b/b- 15)

16.Calculate the molar conductance of 0.025M aqueous solution of $CaCl_2$ at $25^0$C .The specific conductance of $CaCl_2$ is 12.04 x $10^{-2}$ $Sm^{-1}$ (in.p.no : 37

17.What is leclanche cell ? (in.p.no : 56 )

# 12 th CHEMISTRY QUESTION BANK  VOLUME- 2

## 10.SURFACE CHEMISTRY

### MORE IMPORTANT QUESTIONS :-

1.**give any three difference between chemisorption and physisorption (mar 20)( B/B : 2)**

2.**Write a note on tyndall effect (sep 20)** ( in.p.no : 93. )

( Or) write the optical property of colloid?

3.**Write any five characters of catalysts (sep 20) (May22) ( in.p.no : 78. )**

4.**describe adsorption theory of catalysis. (B/B-24) (jul 22) (aug 21)**

5.Explain intermediate compound formation theory of catalysis with an example (b/b - 22 )

6.Write briefly about the preparation of colloids by condensation methods  ? (In.p.no : 90  )

7.What are active center ? (In.p.no : 82 )

8. **What is mean by electro osmosis? (B/B-20) (aug 21)**

9.Write short note on i) catalytic poison(b/b -22  )  ii) peptisation. (In.p.no : 90 )

10.Write short note on    i) promoters         ii) autocatalyst (In.p.no : 79 )

11.**Write a note on Electrophoresis. (May22) (in.p.no : 94)**

12.**What is homogeneous  catalysis ? Give example (May22)  (b/b-23  )**

13.**What is heterogeneous catalysis ? give example  (jul 22)  (b/b-23  )**

14.**What is inversion of phase ?  give an example( inst 20)( in.p.no : 98 )**

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

16.what is nano catalysis ? give example ? (in.p.no : 86 ) (b/b-  )

17. Define gold number. (in.p.no : 96 )

18. Give two example for enzyme catalysis? (in.p.no : 83 )

19.Mention the medicinal uses of colloids (in.p.no :98  )

20.Write the shape of colloidal particle ? (in.p.no : 92)

# 12 th CHEMISTRY QUESTION BANK  VOLUME- 2

## ANOTHER IMPORTANT QUESTIONS :-

1. **Write this dispersed phase and dispersion medium of butter (mar 20) ( in.p.no : 88. )**

2. **Mention the shape of the following colloidal particles ( in.p.no:93)(mar20) I).As2s3  b).blue gold sol  c).tungstic acid sol**

3. **Identify the auto catalyst in the following reaction( inst 20) ( in.p.no : 79 )**
   **1.$CH_3COOC_2H_5 + H_2O \rightarrow CH_3COOH + C_2H_5OH$  2.$AsH_3 \rightarrow 2As + 3H_2$**

4. **Name the factors affecting adoption( inst 20) ( in.p.no : 72 )**

5. What are the emulsion ? Give three uses of emulsions (b/b- 16 )

6. Write a short note on ultrafiltration (In.p.no : 91  )

7. Write short notes on   i) Negative catalyst   ii) positive catalyst (In.p.no :77  )

8. Write a note on electrophoresis. (In.p.no : 94 )
   (Or) write the electric property of colloid

9. What do you mean by helmholtz electrical double layer? (In.p.no : 94  )

10. Write about lyophilic and lyophobic colloids. Give any one example  for each colloid. (In.p.no : 87 )

11. Write a short note  on Brownian movement  (In.p.no :93  )
    (Or) write the Kinetic property of colloid ?

12. What is peptization ? give example (in.p.no : 90)

13.  what is difference between SOL and gel  (b/b -8  )

14. Write a preparation of colloid by exchange of solvent method. (In.p.no :  91)

15.  Write a character for adsorption? (In.p.no : 71 )

16. Explain how colloids prepared by Bredig's method . (In.p.no :  89)

17. Explain any three factors affecting adsorption. (In.p.no : 72 )

18. . What is dialysis ? (In.p.no :  91)

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

20. Peptising agent is added to convert precipitate into colloidal solution explain with an example  (b/b - 6 )

21.  What happens when hydrogen sulphide gas is passed through a solution of arsenic oxide name the chemical method. (In.p.no : 90  )

22.  Define Emulsification and Deemulsification. (in.p.no :97  )

## *12 th CHEMISTRY QUESTION BANK VOLUME- 2*

23. explain Freundlich adsorption isotherm (in.p.no :74 )

24.Explain any three factors affecting adsorption . (in.p.no : 72 )

25.What is phase transfer catalyst (in.p.no : 85 )

26.How is delta formed ? what is tanning ? (in.p.no :99 )

27.What is flocculation value ? (in.p.no : 96 )

28.Addition of alum purifies water .why ?  (b/b- 11 )

29.what is coagulation mention its types ?  (b/b- 20 )

30.Describe some feature of catalysis by zeolites(b/b-15)

31.In zeolite catalysis reactions , occur only inside the pores, why ?(in.p.no :85)

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

*12 th CHEMISTRY QUESTION BANK  VOLUME- 2*

## 11.HYDROXY COMPOUNDS AND ETHERS

*MORE IMPORTANT QUESTIONS :-*

**1.**Give the coupling reaction of phenol (mar 20) ( in.p.no : 131 )( dye test)

**2.**How to distinguish $1^0$ , $2^0$ , and $3^0$ alcohol by victor Meyer test **(sep 20)** ( in.p.no : 111 )

**3.**Convert glycerol to acrolein( inst 20) ( in.p.no : 121 ) (OR)
What happens when glycerol react KHSO₄ ᴏʀ Con H₂SO₄?

**4.**Explain auto oxidation of ethers( inst 20) ( in.p.no : 137 )

**5.**What is Baeyer's regent ? how it is useful to convert ethene to ethane 1 2 diol ( inst 20) (in.p.no : 110)

**6.**How are the following conversion effected? (aug 21)
     I) ethylene glycol → acetaldehyde (in.p.no.119)
     ii) glycerol → acrolein (in.p.no.121)

**7.**differentiate primary secondary and tertiary alcohols using Lucas test (in.p.no.110)(aug 21)

**8.** give the uses of diethyl ether(in.p.no.138). (aug 21)

9.Write noteson i) Dow's process(IN.no:126)ii)Reimer Tiemann Reactio(p.no:130

10.Write the kolbes reaction. ( b/b- 12 )

11.How is ethylene glycol converted into 1,4 dioxane ( in.p.no : 120 )

12. How will you prepare picric acid from phenol ( in.p.no : 129 )

13.How are Williamson synthesis of ether ? (mechamism) ( in.p.no : 135 )

14.How to differentiate phenol and alcohol. ( in.p.no : 131 )

15.How is phenolphthalein is prepared ?(in.p.no:131)(OR) Phthaleine reaction

16.what is metamerism and give one example ( b/b- 15 )

17. Write a short note on schotten-baumann reaction ( in.p.no : 127 )

18. How are the nitroglycerin prepared from glycerol ( in.p.no : 121 )

**19.**Write any one method of preparation of diethyl ether(May22)(p.no:134 )

**20.**What are the uses of glycerol (jul 22) (in.p.no : 122 )

**21.**Write a bromination rection of anisole (jul 22) (in.p.no : 138 )

**22.** Mention the mechanism in the following reactions(sep 20)( in.p.no :137)
     I) One mole of HI reacts with methoxy ethane
     ii) One mole of HI reacts with 2 methoxy 2 -methylpropane

## 12 th CHEMISTRY QUESTION BANK VOLUME- 2

### ANOTHER IMPORTANT QUESTIONS :-

**1. Why is C-O-C bond angle in ether slightly greater than the bond angle (mar 20) ( in.p.no : 133 ) ( compulsory 2 mark)**

**2.how will you prepare the following by using grignard reagent (mar 20)**
 **a).Propan-1-ol        b).propan-2-ol ( in.p.no : 108 )**

3.Identify A and B    $CH_3-CH=CH_2 \xrightarrow{\text{H}_2\text{O/ H}^+}$ A    ( markownikoff rule)

$CH_3-CH=CH_2 + B_2H_6 \xrightarrow{\text{H}_2\text{O}_2/ \text{OH}^-}$ B(in.p.no:108&109)

  (OR)            (hydroboration or antimarkownikoff rule)

4.How ether is prepared from diazomethane? ( in.p.no : 135 )

5. Write the uses of ethylene glycol and phenol ( in.p.no : 122& 131 )

6.How are the glycerose prepared from glycerol   ( in.p.no : 121 )

7.What is PCC ? mention its use.Write the swern oxidation ( in.p.no : 117 )

8. How will you convert phenol into 2 4 6 tribromophenol( in.p.no : 130 )

9.How does HI react with following compouds

   i) $C_2H_5-O-CH_3$                ii) $C_6H_5-O-CH_3$ ( in.p.no : 136 )

10.Write any two methods of preparing of diethyl ether. ( in.p.no :136 &137)

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

  Acetyle chloride $\xrightarrow{\text{CH}_3\text{MgBr/H}_3\text{O}^+}$ X $\xrightarrow{\text{acid K}_2\text{Cr}_2\text{O}_7}$ A

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

13.Give an example for simple ether and mixed ether ? ( in.p.no : 132 )

14.Write note biological oxidation( in.p.no :   118 )

15.Explain the saytzeff's rule ( in.p.no : 116 )

16.what is saponification reaction. ( in.p.no : 110 )

17.How is phenol prepared from

   i) chloro benzene    ii ) isopropyl benzene ( in.p.no : 11 )

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

19.Theethe chemical equation for oxidation of Ethylene glycol with perlodic acid? ( in.p.no : 120 )

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## 12 th CHEMISTRY QUESTION BANK  VOLUME- 2

20.How does diethyl ether react with the following reagent ( in.p.no : 137    )

  a) $Cl_2$/light    b) dil $H_2SO_4$    c) $PCl_5$

i) $CH_3 - CH_2 - OH \xrightarrow{P\ Br_3} A \xrightarrow{aq.NaOH} B \xrightarrow{Na} C$

ii) $C_6H_5 - OH \xrightarrow{Zndert} A \xrightarrow[\text{Anhydrs } AlCl_3]{CH_3Cl} B \xrightarrow{acid\ KMnO_4} C$
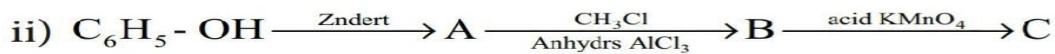
21. Complete the following reaction (b/b-17)

22.Write the mechanism of acid catalysed dehydration of ethanol to give ethane ? b/b-10

23.Write the IUPAC name for the following compounds ?

(i) $CH_3 - \underset{\underset{CH_3}{|}}{CH} - CH_2 - OH$    (ii) [cyclohexanol structure with OH]
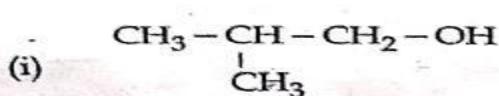
 (i) 2-methyl-1-propanol  ii) Cyclohexanol

24.Name the two test to differentiate three type of alcohols

   i) lucas test ii) victor meyer"s test

25. How is glycol prepared from ethylene ? (in.p.no : 110

26.Find A B and C of the following reaction ? ( Kolbe reaction (in.p.no : 130 )

[phenol structure] $\xrightarrow{NaOH} A + CO_2 \xrightarrow[\text{4 - 7 bar}]{400\ K} B \xrightarrow{H^+/H_2O} C$
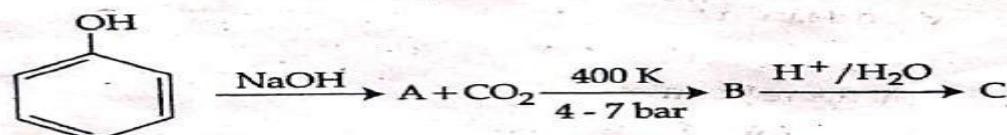
27.How is crotyl alcohol obtained by reduction reaction ? (in.p.no : 109

28.Complete the following reaction ? ( nitration(in.p.no : 138

[anisole $OCH_3$ structure] $\xrightarrow[\text{Con } HNO_3]{\text{Con } H_2SO_4} A + B$

29.Complete the following reaction (b/b-19)

i) [phenol $OH$ structure] $\xrightarrow[OH^-]{C_6H_5COCl} A \xrightarrow{Nitration} B$ (major product)

ii) $C_6H_5 - CHCH(OH)CH(CH_3)_2 \xrightarrow{ConH_2SO_4}$
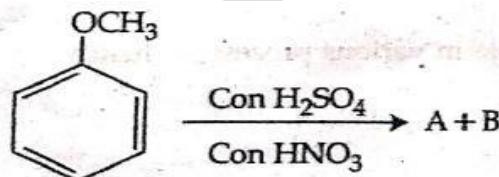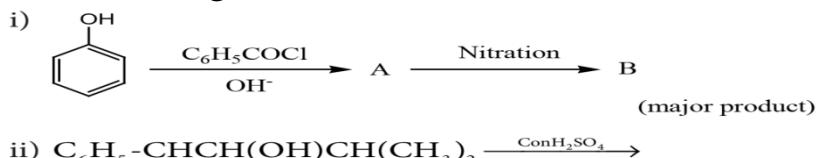
## 12 th CHEMISTRY QUESTION BANK  VOLUME- 2

30.Complete the following reaction (b/b-17)

i) $CH_3 - CH_2 - OH \xrightarrow{P\,Br_3} A \xrightarrow{aq.NaOH} B \xrightarrow{Na} C$

ii) $C_6H_5 - OH \xrightarrow{Zndert} A \xrightarrow[\text{Anhydrs }AlCl_3]{CH_3Cl} B \xrightarrow{acid\,KMnO_4} C$

iii) $Arisole \xrightarrow[AlCl_3]{\text{t-batylchloride}} A \xrightarrow{Cl_2/FeCL_3} B \xrightarrow{HBr} C$

iv) (cyclohexane ring with $CHOHCH_3$ and $CH_3$ substituents) $\xrightarrow{H^+} A \xrightarrow[\text{ii) }H_2O]{\text{i) }O_3} B$
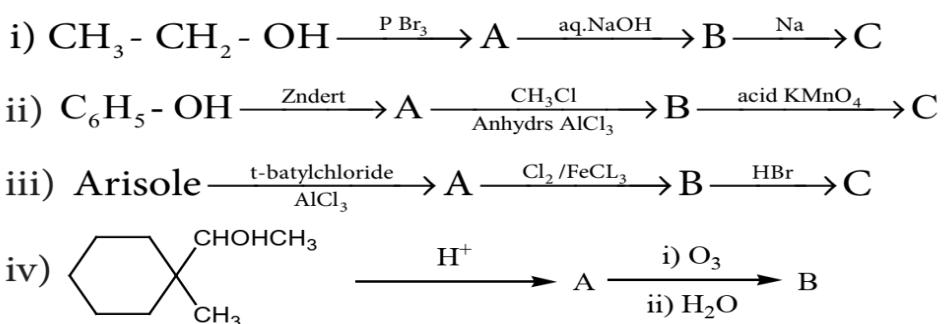
31. Arrange the following in the increasing order of their boiling point and give a reason for   your ordering (b/b-6)

(i.) Butan – 2- ol, Butan -1-ol, 2 –methylpropan -2-ol

(ii.) Propan -1-ol, propan -1,2,3-triol, propan -1,3 – diol, propan -2-ol

## 12 th CHEMISTRY QUESTION BANK VOLUME- 2

### 12.CARBONYL COMPOUNDS AND CARBOXYLIC ACID

### MORE IMPORTANT QUESTIONS :-

**1.name the catalyst used in rosenmund reduction and state its importance (mar 20) ( in.p.no : 151) Write a note on Rosenmund rerduction (jul 22)**

**2.formic acid reduces tollen's reagent whereas acetic acid does not reduce give reason (mar 20) (May22) ( in.p.no : 177 )**

**3.What is urotropine how it is prepared (sep 20) ( in.p.no : 158 ) and uses**

**4Write the test for carboxylic acid group (sep 20) ( in.p.no : 177. )**

**5.Write the mechanism of aldol condensation reaction( inst 20) ( in.p.no :161)**

**6.Give the test for carboxylic acid group (In.p.no : 177) (jul 22) (Aug21)**

**7.how will you convert benzaldehyde into the following compounds? (Aug21)**
   **i) benzoin(in.p.no.164)    ii)cinnamic acid (B/B-15 ix)**
   **iii) malachite green(B/B-15viii)**

8. How does ammonia react with the following compounds( in.p.no : 158 ,158,159 )    i) formaldehyde ii) acetone iii) benzaldehyde

9.Explain the mechanism of cannizaro reaction?( in.p.no : 163 )

10.Formic acid is more stronger than acetic acid. Why ? ( in.p.no : 178 )

11.Write two test for aldehyde ? ( in.p.no : 166 )

**12.Write note on benzoin condensation. (jul 22)(in.p.no :164)**

**13.What is formalin what is its use (mar 20)( in.p.no : 167)**

**14.Arrange the following in the increasing order of relative reactivity of acid derivative and mention the reason alone(sep 20)( in.p.no : 180.)**
    **CH₃COOC₂H₅ CH₃COCl CH₃CONH₂ CH₃COOCOCH₃**

**15. Explain Benedict's solution test( inst 20)( in.p.no : 167)**

16.The oxidation of unsymmetrical ketone is governed by which rule? State the rule with suitable examples?( in.p.no : 159 )

**17.Write the haloform reaction with an example(May22)( p.no161)**

18.Write clemmenson reduction ? ( In.p.no : 160 )

19. Write Wolfkishner reduction ? ( In.p.no : 161)

20.Write stephenen's reaction ( In.p.no : 151 )

21.write gattermann-koch reaction ( In.p.no : 152 )

## 12 th CHEMISTRY QUESTION BANK VOLUME- 2

22.write the HVZ reaction   ( In.p.no :176   )

23. Write the test for esterification reaction?  And mechanism ( In.p.no:173   )

24.write about knoevenagal reaction   ( In.p.no : 165)

25. what is kolbe's electrolysis reaction?& decarboxylation reaction
     ( In.p.no : 175  )

26.Write the etard reaction ? ( In.p.no : 151)

**27.Give the IUPAC names (May22)**
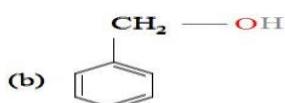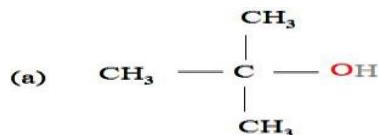


a) 2-methyl-2-propanol    b) phenyl methanol

28.How will you prepare (b/b-16)

i) Acetic anhydride from acetic acid

ii) Ethylacetate from methylacetate

iii) Acetamide from methylcyanide

 iv) Lactic acid from ethanol

 v) Acetophenone from acetylchloride

 vi) ethane from sodium acetate

vii) Benzoic acid from tolune

viii) malachitegreen from
           benzaldehyde

ix) Cinnamic acid from benzaldehyde

x) Acetaldehyde from ethyne

# 12 th CHEMISTRY QUESTION BANK VOLUME- 2

## ANOTHER IMPORTANT QUESTIONS :-

1. Write the reduction of pinacols ? ( In.p.no :161 )

    Write the reaction of Claisen- Schmidtreaction- ( In.p.no : 163)

2. What is glacial acetic acid ?( In.p.no : 172)

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

4. Write the friedel craft acylation reaction? ( In.p.no : 152 )

5. Write the following reaction  i) perkin's reaction -165

                      ii) Claisen condensation? -163

6. Write the reaction of benzaldehyde with chlorine in the absence and

    presence   of catalyst. ( In.p.no : 166)

7. Identify the A,B,C compounds    ( b/b –5 )

$$CH_3COOH \xrightarrow{\quad SOCl_2 \quad} A \xrightarrow{\quad Pd/BaSO_4 \quad} B \xrightarrow{\quad NaOH \quad} C$$

8. Write the cross aldol condensation reaction ?-162

9. Write a crossed cannizzaro reaction? (in.p.no : 164 )

10. Write the reactivity of the acid derivatives the order ?(in.p.no 180)

11. Write the use of formaldehyde ,acetaldehyde and acetone ? (in.p.no 165)

12. Name the ester which has the following flavolur ? (in.p.no : 185 )

   i)  banana ii) pine apple iii) oprange iv) apricot

13. Complete the following reaction ? (in.p.no : 155&159 )

(i)    $CH_3CHO \xrightarrow[\text{HCl}]{2\ CH_3OH}$ ?      (ii) $CH_3 - CH_2 - CH_2 - \underset{\underset{O}{\|}}{C} - CH_3 \xrightarrow[\text{Conc. } HNO_3]{(O)}$ ?
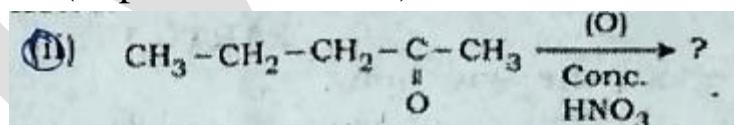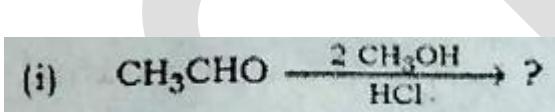
14. How will you prepare benzophenone from benzene (in.p.no : 153 )

15. Write the IUPAC name of the following ?

    i) $CH_2=CH-CHO$                   iii) $HOOC-(CH_2)_2-COOH$

    ii) $CH_3-C-CH_3$

           $\|$

           O

   i)Prop-2-en-1-al ii) propan-2-one iii) butane-1,4-dioic acid

16.. Convert the following I) acetone to chloroform (in.p.no : 161 )

                    ii) Acetic acid to ethanol(in.p.no : 174)

## 12 th CHEMISTRY QUESTION BANK  VOLUME- 2

17. Compound A of molecular formula $C_7H_6O$ rects with concentrated alcoholic alkali to give compound B of molecular formula $C_7H_8O$ and compound C of molecular formula $C_7H_5O_2Na$. compound C on  hydrolysis gives an aromatic carboxylic acid. Find A,B and C and write the equation . Identify A and B (in.p.no : 163 ) ( cannizaro reaction )



$C_6H_5COOH \xrightarrow{PCl_5} A \xrightarrow[\text{Anhydrous AlCl}_3]{C_6H_6} BH_3$
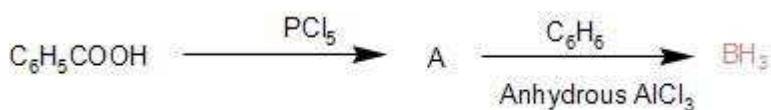
A= $C_6H_5COCl$ (benzoyl chloride) B= $C_6H_5COC_6H_5$ (benzophenone)

18. write the equation for the reaction between acetone and ammonia p.no : 160

19. explain the following reactions i) ozonolysis reaction (in.p.no : 149)

ii) Trans esterication reaction (in.p.no :185)

20. Write the uses of formic acid ,acetic acid and benzoic acid (in.p.no : 188)

21. How is propanoic acid is prepared starting from (b/b-1)

(a) an alcohol (b) an alkylhalide (c) an alkene

22. How will you convert benzaldehyde into the following compounds? (b/b-8)

i) benzophenone    ii) benzoic acid

23. What is the action of HCN on (b/b-9)

i) propanone  ii) 2,4-dichlorobenzaldehyde iii) etanal

24. Identify A,B and C (B/B-4)



benzoic acid $\xrightarrow{PCl_5}$ A $\xrightarrow[\text{Anhydrous AlCl}_3]{\text{Benzene}}$ B

$C_2H_5OH \downarrow H^+$

C $\xrightarrow{C_6H_5MgBr}$

25. Identify A,B and C (B/B-14)



Benzyl bromide $\xrightarrow[\text{THF}]{NaCN}$ A $\xrightarrow{H_3O^+}$ C

Mg ether $\downarrow$

(B) $\xrightarrow[\text{ii) H}_3O^+]{\text{i) CO}_2}$
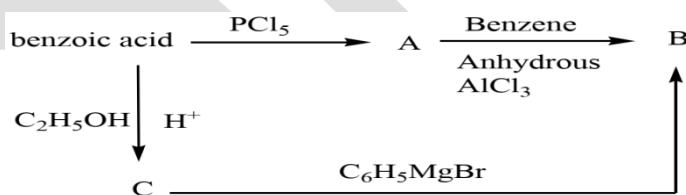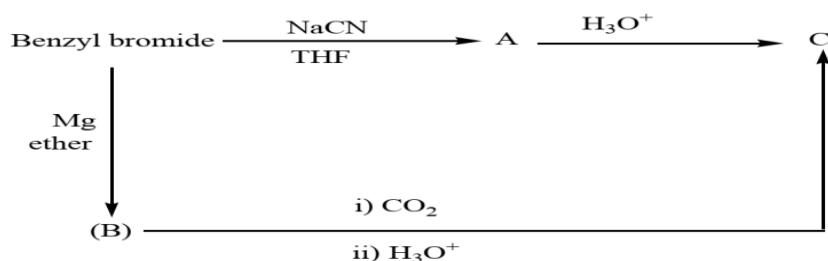
# 12 th CHEMISTRY QUESTION BANK VOLUME- 2

## 13.ORGANIC NITROGEN COMPOUNDS

**MORE IMPORTANT QUESTIONS :-**

**1.i)** How is chloropicrin prepared (mar 20) ( in.p.no : 203)

    **ii)** sand meyer reaction

**2.Identify A and B (mar 20).  ( in.p.no : 208. ) ( Mendius reaction)**

    **A.** $\xrightarrow{\text{Na(Hg)/C}_2\text{H}_5\text{OH/4[H]}}$     $CH_3\text{-}CH_2\text{-}NH_2$

    **B** $\xrightarrow{\text{Na(Hg)/C}_2\text{H}_5\text{OH/4[H]}}$     $CH_3\text{-}NH\text{-}CH_3$
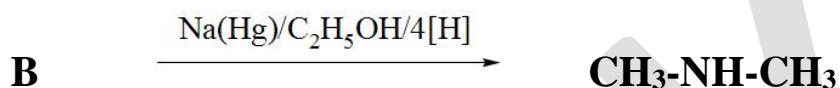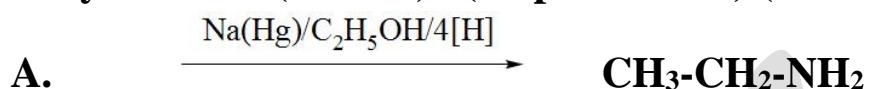
**3.**Aniline does not undergo friedel crafts reaction give reason **(sep 20)(B/B:8i)**

**4.**write short note on Gabriel phthalimide synthesis**(sep20)(May22)(B/B:(6)3 )**

**5.** name the reducing agent used in the reduction of nitrobenzene to the
following  compounds( inst 20) ( B /B : 4 )

    A).Aniline -vii

    B).phenyl hydroxylamine vi

    C).Nitroso benzene-203

    D).mustard oil reaction ( B /B : 6 vi)

**6.** Write a electrolytic reduction of nitrobenzene-204

**7.Identify A and B in the following sequence of reactions (May22)**

**(in.p.no : 210) ( compulsory 2 mark)**

$$CH_3 \text{---} Br \xrightarrow{\text{NaN}_3} A \xrightarrow{\text{LiAlH}_4} B + N_2$$
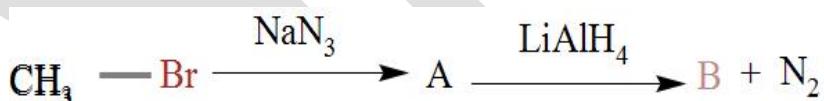
**8.Identify compounds A,B and C for the following (jul 22) (in.p.no : 203)**

**( compulsory 3 mark)**

$$C_6H_5 - NO_2 \begin{cases} \xrightarrow{\text{Sn/HCl}} A \\ \xrightarrow{\text{Zn/NH}_4\text{Cl}} B \\ \xrightarrow{\text{Zn/NaOH}} C \end{cases}$$

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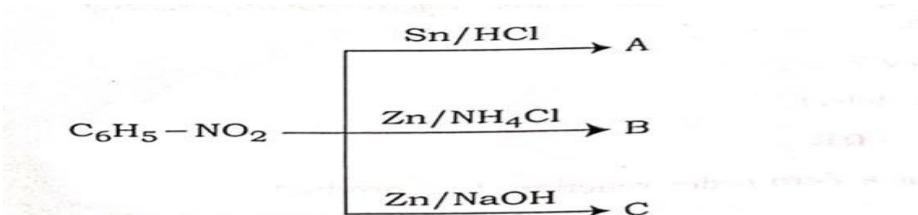
# *12 th CHEMISTRY QUESTION BANK  VOLUME- 2*

**9 Write a note on (jul 22) (b/b-6)**

    **i)    Bromination of aniline    ii) Mustard oil reaction.**

**10. what is gomberg reaction explain (mar 20) (B/B : 9 IX)**

**11. How is aryl halide  prepared by using $Cu_2Cl_2$ /HCl(or)  $Cu_2Br_2$/HBr. ?**

**( inst 20)( in.p.no : 220) ( compulsory 2 mark)**

12.Explain diazotiaton with a  suitable.  Example-(in.p.no : 215)

**13. What is carbylamine rreaction ( b/b –6v  ) (May22)**

14.How will you distinguish between primary, secondary and tertiary  aliphatic amines.   ( b/b -7   )

15.Nitrous acid react with primary and secondary amine  and tertiary amine -215

16. What is libermann's  nitroso test?( In.p.no :215 )

17.How will you aniline react with  $Br_2/H_2O$ -217

18. Write a note on reduction  nitrobenzene-203

19.write the  Hofmann degradation reaction   ( In.p.no :  209 )

20. Write short notes on the following(b/b-6)

    I)hoffman's bromide reaction

    ii) hoffmann's ammonolysis

    iii) Schotten -baumann reaction

21 How will you convert from benzenediazonium chloride to (in.p.no :221,220)
    i)phenol ii) iodo benzene iii)biphenyl iv) chloro benzene

22.Write the reaction of electrolytic reduction of nitro benzene

23.Why PKb of aniline is more than ethylamine (b/b-8)

24.Write a note trope nitrile condensation? (in.p.no : 225)

25.Explain the structure of amine (in.p.no : 208)

## 12 th CHEMISTRY QUESTION BANK  VOLUME- 2

### ANOTHER IMPORTANT QUESTIONS :-

i. Indentify A,B and C

$$HO-OC-CH_2-CH_2-CH_2-CO-OH \xrightarrow{SoCl_2} A \xrightarrow{NH_3} B$$
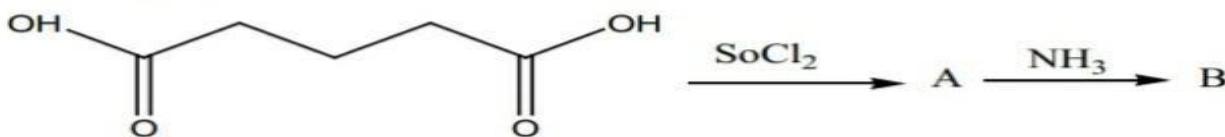
**1.(sep 20) ( b/ b −13)**

2. Write the reduction of nitroalkane ? (OR)

**From the following reaction identify A and B (Aug21)     (in.p.no.202)**
**( compulsory 2 mark)**

$$CH_3-NO_2 \xrightarrow[6\,[H]]{Sn/HCl} A$$
$$CH_3-NO_2 \xrightarrow[4[H]]{Zn/NH_4Cl} B$$
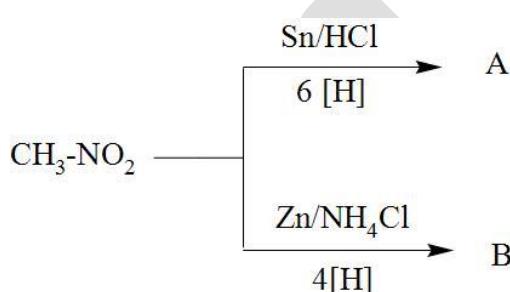
### Answer :-

   A= $CH_3-NH_2$ (Methyl amine),.  B= $CH_3-NH_2OH$ ( N-methyl hydroxylamine )

3. Write a note   sabatier-mailhe on method-(In.p.no : 210 )

**4.A compound 'A' of molecular formula $C_2H_3N$ on reduction with Na(Hg)/$C_2H_5OH$ gives 'B' of molecular formula $C_2H_7N$ which undergoes carbylamine test.Compound 'B' on reduction with nitrous acid gives compound 'C' of molecular formula $C_2H_6O$ by liberating nitrogen. Identify A,B and C and write the reaction involved. (Aug21)**

### Answer :-

$$CH_3-CN. \xrightarrow[C_2H_5OH]{Na/Hg} CH_3-CH_2-NH_2$$

Methyl cyanide                                 ethyl amine

(A)                                                    (B)

$$CH_3-CH_2-NH_2 + HNO_2 \longrightarrow CH_3-CH_2-OH + N_2$$
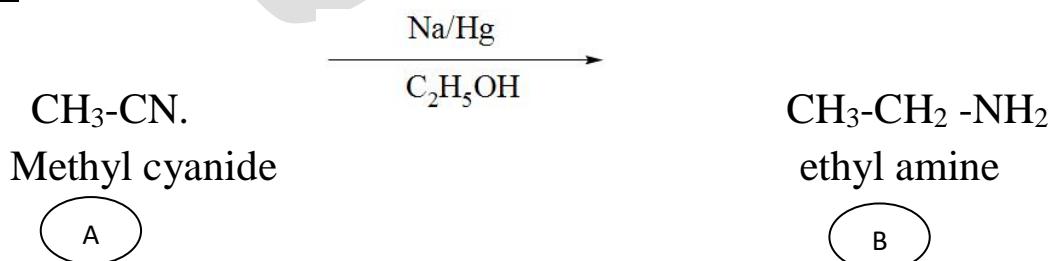
## 12 th CHEMISTRY QUESTION BANK  VOLUME- 2

Ethyl amine                                    ethanol

( B )                                          ( C )

| S.NO | COMPOUND | NAME | FORMULA |
|------|----------|------|---------|
| 1 | A | Methyl cyanide | $CH_3-CN$ |
| 2 | B | Ethyl amine | $CH_3-CH_2-NH_2$ |
| 3 | C | Ethanol | $CH_3-CH_2-OH$ |

5. Write the NEF carbonyl synthesis   -203

6. Explain the structure of amine-208

7. Write a short note on  solvation effect-213

8 . Arrange the following (b/b- 9) v,vi

   I)    in decreasing order of the pkb values

         $C_2H_5NH_2$,  $C_6H_5NHCH_3$, $(C_2H_5)_2NH$,   and       $CH_3NH_2$

   II)   Increasing order of basic strength

         $C_6H_5NH_2$,  $C_6H_5N(CH_3)_2$, $(C_2H_5)_2NH$,  and     $CH_3NH_2$

9. There are two isomers with the formula $CH_3NO_2$. How will you distinguish between them? ( b/b - 2  )

10. How will convert nitrobenzene into  (b/b-4)

      i)azoxy benzene, ii)m-nitroaniline .

11. How will convert nitrobenzene into  (b/b-4)

      i) N-phenyl hydroxylamine ii) hydrozo benzene.

12. Account the following  (b/b-8)

      i). Why does aniline not undergo friedel craft reaction?

      ii) Amines are more basic than amide.

      iii)ethylamine is soluble in water where aniline is not

      iv) pka of aniline is more than that of methylamine

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

# 12 th CHEMISTRY QUESTION BANK  VOLUME- 2

14Write about Tautomerism?and difference between nitro form and aciform- 199

15.How is methyl isocyanide prepared from N-alkyl formamide ? (in.p.no : 226)

16.Identify A, B and C (b/b-11)

$$CH_3-NO_2 \xrightarrow{Li\ AlH_4} A \xrightarrow{2CH_3CH_2Br} B \xrightarrow{H_2SO_4} C$$
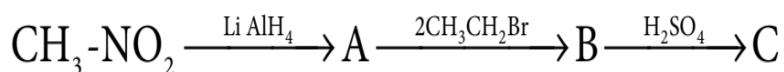
17.Predict A,B ,C and D for the following reaction (b/b-16)
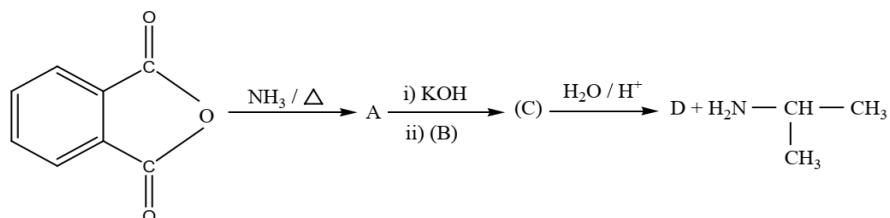


18.Indentify A to E in the following frequency of reaction (b/b-18)
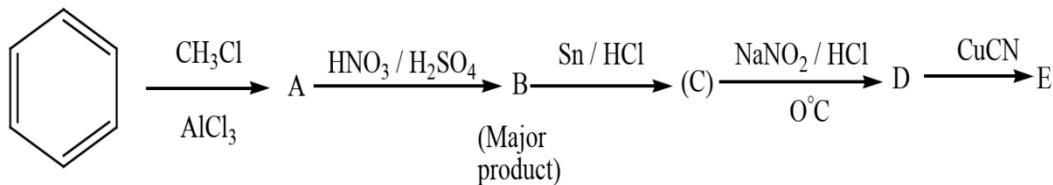


19.Identify compounds A,B and C in the following sequence of reactions (b/b-5)

$$i)C_6H_5NO_2 \xrightarrow{Fe/HCl} A \xrightarrow[273K]{HNO_2} B \xrightarrow{C_6H_5OH} C$$

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

$$iii)CH_3CH_2I \xrightarrow{NaCN} A \xrightarrow[Partial\ hydrolysis]{OH^-} B \xrightarrow{NaOH + Br_2} C$$

$$iv)CH_3NH_2 \xrightarrow{CH_3\ Br} A \xrightarrow{CH_3COCl} B \xrightarrow{B_2H_6} C$$

$$v)C_6H_5NH_2 \xrightarrow[pyridine]{(CH_3CO)_2O} A \xrightarrow[H_2SO_4,288K]{HNO_3} B \xrightarrow{H_2O\ /\ H^+} C$$

vi)



$$vii)\ CH_3CH_2NC \xrightarrow{HgO} A \xrightarrow{H_2O} B \xrightarrow[ii)H_2O]{i)NaNO_2\ /\ HCl}$$
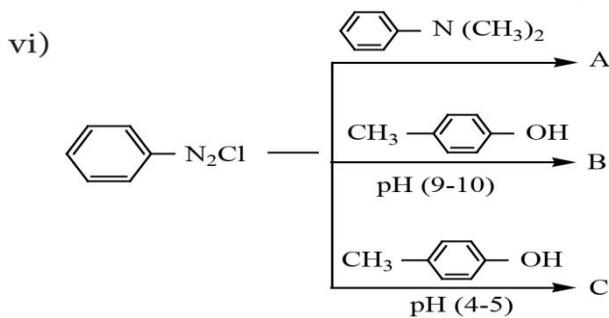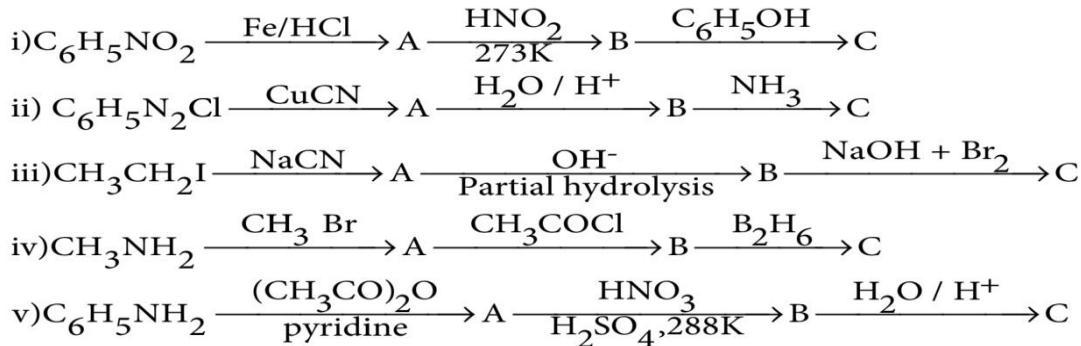
20.write the uses of nitrobenzene ?(in.p.no 228)

## *12 th CHEMISTRY QUESTION BANK VOLUME- 2*

### 14.BIOMOLECULES

*MORE IMPORTANT QUESTIONS :-*

**1.What is glycosidic linkage (mar 20) ( in.p.no : 247)**

**2. How are RNA molecules classified ? explain (sep 20) ( in.p.no : 264 )**

**3.Write a short note on peptide bond (B/B-6) (Aug21)**

**4.Give any three difference between DNA and RNA (B/B-5) (Aug21)**

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

6.Explain the structure of glucose (In.p.no : 240 )

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

8.Draw the structure of lactose and Sucrose(In.p.no : 247 )

9.What are reducing and non-reducing sugars ? (b/b -9)

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

11. What is isoelectric point? (In.p.no : 252)

12. What is epimerization ? (In.p.no : 244 )

**13. What is called zwitter ion ? give an example (jul 22) (In.p.no : 252 )**

14.Mention the importance of carbohydrate (In.p.no : 250 )

**15.What are epimers ? give example (May22)(in.p.no : 224 )**

**16. i)Draw the structure of D(+) fructose(jul 22) (in.p.no :246 )**

   ii) Draw the structure of α-D(+) glucophyranose (b/b-16 )

   iii) Draw the structure of D(+) glucose (in.p.no : 241 )

17.Mention the biological importance of lipids (b/b- 19 )

18.What are harmones ? give example (b/b- 13 )

19.Give two difference beteween Hormoes and Vitamins? (b/b- 7 )

20.Name the vitamins whose deficiency cause (in.p.no : 259 )

     i)Pellegra ii)Beri-Beri iii)Night blindness

21.Write a note on denaturation of proteins? (b/b- 8)

22.Write short note on cyclic structure of fructose? (in.p.no : 243 )

23.Explain primary ,secondary and tertiary structure of proteins

   (OR) explain the structure of protein (in.p.no :254 )

24.How are vitamine classified ? (b/b- 12 )

**25.** Explain the method of DNA finger printing ? (in.p.no :265 )

# 12 th CHEMISTRY QUESTION BANK  VOLUME- 2

## ANOTHER IMPORTANT QUESTIONS :-

1.Classify the following into monosaccharides diogosaccharides and polysaccharides. (b/b - 11 )

       A)Strech B)Glucose C)Galactose D)Maltose

2.i) Identify A and B    Fructose + conc $HNO_3 \rightarrow$ A+B.Write the equation (In.p.no : 246  )

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

3.How will you classify carbohydrates ?  (In.p.no : 239  )

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

5. Write a structure of all possible type updates which can be obtained from glycine and alanine   (b/b -  14)

6. Why carbohydrate are generally optical active  (b/b - 10)

7. Write the structure of   D (+)  glucophyranose (b/b -16  )

8. Is the following sugar , D sugar or L  sugar (b/b -20  )

```
                    CHO
                     |
        OH ----------+---------- H
                     |
        OH ----------+---------- H
                     |
        OH ----------+---------- H
                     |
                 CH₂ - OH
```
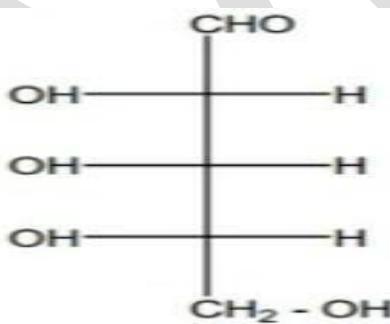
9.Write a note on formation of α-helix  (b/b- 18  )

10.What is different between fibrous protein and globular protein ? (in.p.no:253)

11.Mention any three  importance of protein in biological process ?(in.p.no:256)

12.Define enzymes  (b/b- 15  )

## 12 th CHEMISTRY QUESTION BANK  VOLUME- 2

### 15.CHEMISTRY IN EVERYDAY LIFE

**MORE IMPORTANT QUESTIONS :-**

**1. State any three advantage of food additives (mar 20)( in.p.no : 283 )**

**2. What is vulcanization (mar 20) ( B/B : 18)**

**3.. Give a brief account antioxidants (sep 20)( in.p.no : 283 )**

**4.How do you classify the following into various class of drugs(sep 20)**

   **a).Milk of magnesia     b).Aspirin ( in.p.no : 278,279,280 )**

   **c).penicillin         d).procaine**

**5.How is neoprene prepared ? ( inst 20) ( in.p.no : 292)**

**6.Howto antiseptics differ from disinfectants ?( inst 20) ( B/ B : 5 )**

7. What is therapeutic index ?  How is it related to the safety of the drug ?

   (in.p.no : 273 )

8. What is TFM? How TFM used? (in.p.no :284 )

9. What is antiseptic agent give an example? (in.p.no : 282)

10.How do you prepare of Nylon-66 , Buna-S (in.p.no : 289,292 )

11. How do you prepare Teflon ?Give its uses (in.p.no : 288)

12. What are food preservatives?  (b/b-6 )

13. Write the preparation of Buna-N, Buna-S, ? (in.p.no :  292,293)

14. Differentiate thermoplastic and thermosetting  (b/b- 20)

15.Write briefly on vulcanization of rubber  (b/b-18 )

16.Write the structural formula of aspirin  (b/b-10 )

17.How nylon -6 is prepared ? (in.p.no :289 )

18. What are bio degrable polymers? Give examples.  (b/b-16 )

19.what are narcotic and non-narcotic drugs. give examples.  (b/b-13 )

20.How is terylene prepared ? (b/b- 17 )

# 12 th CHEMISTRY QUESTION BANK  VOLUME- 2

## ANOTHER IMPORTANT QUESTIONS :-

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

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

3. What are Antiseptics? Give an example. (in.p.no : 282 )

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

5.Given example and use of histamine? (in.p.no : 280 )

6. Write a note on antioxidants. (in.p.no : 283)

7. Explain the role of drugs when their target is as (in.p.no : 275,276 )

        a)enzymes            b)Receptors

8. Give an example and use of antihistamine ? (in.p.no : 280)

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

10. Write the preparation of PHBV (in.p.no : 293)

11. Write the preparation of PAN. And uses (in.p.no :288 )

12.Write the preparation of polythene. How to classification ? (in.p.no :288 )

13.Which sweetening agent are used to prepare sweets for a diabetic patient ?
    (b/b- 12 )

14.Classify the following as linear , branched or cross linked polymers. (b/b- 19 )
        a) Bakelite b)Nylon c) polythene

15. how do antiseptics differ from disinfectants ? (b/b-5  )

16.What are antifertility drugs ?Give an example . (b/b-18  )

17. Why do soaps not work in hard work ?  (b/b-7  )

18. What are drugs ? How are they classified ? (b/b-8  )

19.How the transquilizers work in body ? (b/b- 9 )

## 12 th CHEMISTRY QUESTION BANK  VOLUME- 2

20.Explain the mechanism of cleansing action of soaps and detergents ? (b/b-11 )

21.Which chemical is responsible for the antiseptic properties of dettol ? (b/b- 1 )

22.Explain any five therapeutic action of different classes of drugs (in.p.no : 277)

23.Write a note on synthetic detergents ? (in.p.no : 285)

*Note :*
  → *The purpose of this material created is for students to get high marks
      and pass*
  → *If you have any doubts about this material or you can contact me to give
      your  Valuable comments*

*Maybe any  comments :*

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Trees make
the
environment
clean and
provide us
with oxygen.
They are
necessary for
the elixir of
life.