Class : 12

Register Number

FIRST REVISION EXAMINATION 2019-20

CHEMISTRY

Time Allowed : 3.00 Hours] [Max. Marks : 70

PART – I

Note : i) Answer all the questions 15 x 1 = 15

1. The shape of $XeOF_4$ is
   (a) T- Shape (b) Pyramid (c) Square planar (d) Square pyramid
2. The fraction of total volume occupied by the atoms in a fcc is ----
   (a) $\frac{\pi}{6}$ (b) $\frac{\pi}{3\sqrt{2}}$ (c) $\frac{\pi}{4}$ (c) $\frac{\sqrt{3}\,\pi}{8}$
3. During electrolysis of molten $CuCl_2$, the time required to produce 0.2 mole of chlorine gas using a current of 2A is?
   (a) 32.66 min (b) 321.66 min (c) 378 min (d) 260 min
4. Aniline + benzoyl chloride $\xrightarrow{NaOH}$ C_6H_5 - NH - COC_6H_5 this rection is known as ------
   (a) Friedel - Crafts reaction (b) HVZ reaction
   (c) Cannizzaro reaction (d) Scotten Baumann reaction
5. The pyrimidine base present in DNA is
   (a) Cytosine & Adinine (b) Cytosine & Guanine
   (c) Cytosine & Thiamine (d) Cytosine & Uracil
6. The drug used to induce sleep is
   (a) Paracetamol (b) bithional (c) equanil (d)Chloroquine
7. **Match the following**

A)	V2O5	i)	High density polyethylene
B)	Ziegler - Natta	ii)	PAN
C)	Peroxide	iii)	NH_3
D)	Finely divided Fe	iv)	H_2SO_4

	A	B	C	D
a)	iv	i	ii	iii
b)	i	ii	iv	iii
c)	ii	iii	iv	i
d)	iii	iv	ii	i

8. Number of secondary alcohol group present in glycerol is --------
   (a) 1 (b) 2 (c) 3 (d) 4
9. Assertion : 2,2 - dimethyl propanoic acid does not give HVZ reaction.
   Reason : 2,2 - dimethyl propanoic acid does not have a α - hydrogen atom.
   a) both assertion and reason are true and reason is the corret explanation of assertion.
   b) both assertion and reason are ture but reason is not the correct explanation of assertion.
   c) assertion is true but reason is false.
   d) both assertion and reason are false.
10. Cupellation is the process of used for the refining of ------
    (a) Ag (b) Pb (c) Cu (d) Fe
11. The hydbridization of carbon in C_{60} fullerence is -----
    (a) SP^3 (b) SP (c) SP^2 (d) Partial - SP^2, Partial - SP^3
12. If 75% of a first order reaction was completed in 32 minutes, 50% of the same reaction under the same conditions would be completed in
    (a) 4 min (b) 8 min (c) 16 min (d) 32 min
13. Which one of the following is paramagnetic?
    (a) $[Zn(NH_3)_4]^{2+}$ (b) $[Co(NH_3)_6]^{3+}$ (c) $[Ni(H_2O)_6]^{2+}$ (d) $[Ni(CN)_4]^{2-}$
14. $H_2PO_4^-$ the conjucate base of ------
    (a) PO_4^{3-} (b) P_2O_5 (c) H_3PO_4 (d) HPO_4^{2-}
15. The actinoid element which show the highest oxidation state of +7 is
    (a) NP, Pu, Am (b) U,Fm,Th (c) U,Th, Md (d) Es,No, Lr

PART - II

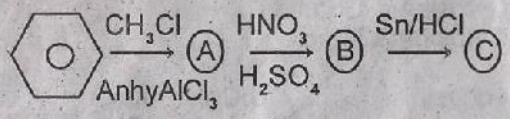
Answer any six questions and question No. 24is compulsory. 6x2=12

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

19. What is sacrifying anode protection?
20. Write about optical property of colloids?
21. What happens when I - Phenyl ethanol is treated with acidified $KMnO_4$?
22. Write the structure and use of Urotropine.
23. Define Zwitter ions.
24. For a reaction x + y + z → products. From the rate law, rate = K $[x]^{3/2}$ $[y]^{1/2}$. What is the overall order of the reaction.

PART- III

Answer any six questions and question no. 33 is compulsory. **6x3=18**

25. Write the condition for the following using elingham diagram.
    i) Reduction of Magnesia by Aluminium
    ii) Is it possible to reduce Fe_2O_3 using Carbon.
26. Explain the structre of Diborane
27. Draw the structure for i) H_2SO_5 ii) HNO_3 ii) H_3PO_4
28. Calculate the packing efficiency of simple cube?
29. For the rate 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
30. Write the solubility product expression for Hg_2Cl_2?
31. Write Kolbe's reaction?
32. Explain the meachanism of Aldol condensation reaction.
33. 

PART - IV

Answer all the questions. **5x5=25**

34. (a) (i) Describe the role of the following in the process mentioned (1) cryolite in the extraction of Aluminium (2) silica in the extraction of copper.
    (ii) Write the consequence of Lanthanide Contraction? **OR**
    (b) (i) Derive the relation between step wise formation, constant and overall formation constant.
    (ii) Out of $Lu(OH)_3$ and $La(OH)_3$ which is more basic and why?
35. (a) (i) What is CFSE?
    (ii) Reduction potentials of metals M_1, M_2 and iron are $E^o_{M1^{+2}/M1} = -2.3V$, $E^o_{M2^{+2}/M2} = 0.2V$ and $E^o_{Fe1^{+2}/Fe1} = -0.44$ V. Predict which metal is better for coating the surface of iron **OR**
    (b) (i) Mention the types of crystals for the following
    1) Anthracene 2) Glucose
    3) Brass 4) SiC
    (ii) Write any three characterization of catalyst.
36. (a) (i) Define Buffer capacity (or) Index?
    (ii) Write note on (1) Co - ordination isomerism (2) Linkage isomerism. **OR**
    (b) (i) What is Auto Catalysis?
    (ii) Write note on (1)Brownian movement (2) Three uses of colloid
37. (a) (i) Why PKb of Aniline is more than ethylamine.
    (ii) How will you classify Carbohydrates. **OR**
    (b) (i) Write Hoffmann's degradation reaction.
    (ii) (1) $H_3PO_3 \xrightarrow{\Delta}$ (2) Two uses of Phosphene
38. (a) (i) How ether is prepared from diazomethane?
    (ii) Write the structure of possible dipeptides obtained from glycine and alanine.
    (b) (i) What is TFM? How TFM is used?
    (ii) Write note on (1) Terylene (2) Buna - N