

HALF YEARLY COMMON EXAMINATION - 2022

12 - Std

CHEMISTRY

Reg No

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Time - 3.00

Marks : 70

I Choose the correct answer.

15X 1 = 15

1. Which of the metal is extracted by Hall - Haroult Process?
a) Al b) Ni c) Cu d) Zn
2. Which of the following is not sp^2 hybridised
a) Graphite b) graphene c) Fullerenec d) Dryice
3. Match

oxoacids of phosphorous	oxidation number of phosphorous
a) Ortho phosphorous acid	i) +4
b) Hypo phosphoric acid	ii) +5
c) Hypo phosphorous acid	iii) +3
d) Pyro phosphoric acid	iv) +1

A	B	C	D
a) (iii)	(iv)	(i)	(ii)
b) (iii)	(i)	(iv)	(ii)
e) (iv)	(iii)	(i)	(ii)
d) (iii)	(ii)	(iv)	(i)
4. **Assertion :** Ce^{4+} is used as an oxidizing agen in volumetric analysis
Reason : Ce^{4+} has the tendency of attaining +3 oxidation state
 a) Both assertion and reason are true and reason is the correct explanation of assertion.
 b) Both assertion and reason are true but reason is not the correct explanation of assortions
 c) Assortion is true but roason is false d) Both assertion and reason are false
5. A magnetic moment of 1.73 BM will be Shown by one among the following
 a) $TiCl_4$ b) $[CoCl_6]^{4-}$ c) $[Cu(NH_3)_4]^{2+}$ d) $[Ni(CN)_4]^{2-}$
6. The Vaccant space in fcc lattice unit cell is
 a) 48% b) 23% d)32% d) 26%
7. The rate constant of reaction is $5.8 \times 10^{-2} S^{-1}$ the order of reaction is
 a) First order b) Zero order c) Second order d) Third order
8. P^H value of 0.01M HCl solution a)10 b) 1 c) 12 d) 2
9. Laptops have
 a) Lead storage battery b) Fuel cell c) Mercury button cell d) Lithium-ion battery
10. Fog is colloidal solution of
 a) Liquid in gas b) solid in gas c) gas in liquid d) gas in gas
11. On reacting with neutral ferric chloride, Phenol gives
 a) red colour b) violet colour d) dark green colour d) no colouration
12. Which one of the following undergoes cannizaro reaction
 (i) CH_3CHO (ii) $HCHO$ (iii) CCl_3CHO (iv) C_6H_5CHO
 a) (i) & (ii) b) (ii) & (iv) c) (ii) (iii) & (iv) d) All the above
13. Which of the following reagent can be used to convert nitrobenzene to aniline
 a) Sn/Hcl b) Zn-Hg/NaOH c) Zn/ NH_4cl d) All the above
14. If one strand of the DNA has the sequence 'ATGCTTGA' Then the sequence of complementary strand would be:
 a) TACGRAGT b) TACGAACT d) TCCGAACT d) TACGTAC.



15. The Medicinal value of a drug is measured in terms of its
 a) Deoxy ribose b) Gold number c) Therapeutic d) Equilibrium constant

II Answer any 6 Questions.

Question Number 24 is compulsory

6x2 = 12

16. Write the difference between minerals and ores.
 17. Give the uses of Borax
 18. What are interhalogen Compounds? given any two examples
 19. Define rate Law and rate constant
 20. Frenkel defect - Define
 21. What is electro phoresis?
 22. Write the acrolein preparation
 23. What is hormone? Given example
 24. Why is AC current used instead of DC in measuring the electrolytic conduction?

III Answer any 6 Questions.

Question Number 33 is compulsory

6x3 = 18

25. Explain Froth - Floation method
 26. How will you identify borate radical?
 27. Write the following for the complex $[Pt(NO_2)(H_2O)(NH_3)_2]Br$
 1) Central metal ion 2) ligands 3) oxidation number 4) Co-ordination entity
 5) Co-ordination number 6) IUPAC Name
 28. Derive integrated rate law for first order reaction?
 29. Explain common ion effect? Given example
 30. Write a short notes on kinetic property of colloids
 31. Give three difference between DNA and RNA
 32. Explain the reducing property of formic acid
 33. Write the two isomers with the formula CH_3NO_2 How will you distinguish between them?

IV Answer all the following

5x5 = 25

34. a) (i) Explain the Mond's process of refining nickel (2mark)
 (ii) Write the uses of silicones (or) (3mark)
 b) (i) Write the difference between lanthanoids and actinoids (3mark)
 (ii) Sulphuric acid is best dehydrating agent prove that
 35. a) (i) Write the postulates of werner's theory (or) (5mark)
 b) (i) What is unit cell (2mark)
 (ii) barium has a body centered cubic unit cell with a length of 508pm along edge. what is density of barium in $g\ cm^{-3}$? (3mark)
 36. a) (i) Derive an expression for ostwald's dilution law (3mark)
 (ii) Differentiate homogeneous catalyst and heterogeneous catalyst (or) (2mark)
 b) (i) Write a short note on sacrificial protection (3mark)
 (ii) Explain mercury - button storage battery (2mark)
 37. a) (i) Write short note on: a) Gabriel phthalimide Synthesis b) coupling reaction
 c) carbylamine reaction (3mark)
 (ii) Differentiate primary, secondary and tertiary amine (any four points) (or) (2mark)
 b) (i) How will you prepare nylon 6,6 and dacron
 (ii) Structure of glucose (2mark)
 38. a) (i) What are food preservatives? (3mark)
 (ii) Write short notes on cleansing action of Soap (or)
 b) Identify A, B, C, D and E in the following sequence of reactions

