FIRST MID TERM EXAM 2024-2024

12 CHEMISTRY COLLECTION OF QUESTIONS UNIT WISE 2&3 MARK

1.METALLURGY

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. Give the basis requirement for vapour phase refining (B/B-12)****
5. Give the limitation of Ellingham diagram.(B/B-16) ****
6. Explain zone refining process with an example (In.P.NO:16)
7. Explain about cyanide leaching.(In.P.NO:4)
8. What is auto reduction?(In.P.NO:10) ****
9. Write notes on calcinations with an example.(In.P.NO:7)****
10. Explain refining of i) titanium by van- arkle method ii) nickel by mond's process. (In.P.NO:16,17) ****
11. What are the main observation of Ellingham diagram?(In.P.NO-12)****
12. Explain concentration by magnetic separation with diagram.(In.P.NO-6)****
13. Describe the underlying principle of froth floatation process.(B/B-4)****
14. Describe the method for refining of nickel.(B/B-6)
15. Define the following terms i) Roasting ii) Calcination (In.p.no:6,7)****
16. Mention any two uses of zinc (B/B-9).
17. Explain the terms with suitable example. a) Gangue b) Slage (B/B-11)
18. Give the Electro chemical principle of metallurgy?

2.P-BLOCK-I

1. Complete the following reaction (B/B-14)
2. Draw the structure of CO and CO_2 (B/B-7)****
3. Give any two uses of borax. (B/B-4)****
4. How is borax extracted from colemanite ?(In.P.NO-33)****
5. How is diborne prepared ? (In.P.NO-36)****
6. How will you convert boric acid into boron nitride.(B/B-17)
7.How will you identify borate radical?(B/B-15)****
8. Mention the uses of potash alum.(In.P.NO-40)****
9. write a short note on anamolous properties of the first elements of each group of p-block
10. Write a note on zeolites. Write its general formula?(B/B-16)
11. Write a short note on hydro boration.(B/B-11) ****
12. Write the preparation of potash alum.(In.P.NO-40)****
13. Write the uses of silicones.(B/B-8)****
14. Draw the structure of inorganic benzene and diborane. IN.P.NO:37 ****
15. How will silicate classified? Give an example for each type of silicate? L.NO:2 (In.P.NO-48)
16. What is known as inorganic benzene ?how it is prepared?(In.P.NO-37) ****
17. Write a note on zeolites.(B/B-16)****

6.SOLIDSTATE

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

2. What are called primitive and non-primitive unit cells?

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

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

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

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

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

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

9. Calculate the number of atoms in a fcc unit cell.

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

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

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

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

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

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

16. Explain 'f' centers with an eat diagram. (In.p.no:194) ****

17. Out line the classification of point defects. (In.p.no:193)

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

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

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

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

14. The composition of a sample wurt zite is Fe 0.93o1.00 calculate the percentage of ions present in the form of Fe3+.

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

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

17. Aluminium crystallizes in a cubic close packed structure .its metallic radius is125 pm. calculate the edge length of unit cell. (B/B-19)

18.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)

19.Experiment shows that Nickel oxide has the formula Ni 0.96O1.00. What faction of Nickelexists as of Ni2+ and Ni3+ ions ? (B/B-16)

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

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

22.A face centred cubic solid of an element (atom mass 60) has a cube edge of 4 A0. Calculate its density.(In.p.no:186)

23.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)

24.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)

7. CHEMICAL KINETICS

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

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

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

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

5. Explain briefly the collision theory of bimolecular reactions.(B/B-13)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

5. HYDROXY COMPOUNDS AND ETHERS

1. Write the uses of diethyl ether and glycerol?(In.P.NO:138&122)****
2. Explain kolbes reaction.(B/B-12) ****
3. What is saponification reaction.(In.P.NO:110)****
4. How will you convert Glycol into1,4 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)
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 distinguish1^0 ,2^0,3^0 alcohols by Lucas test.(In.P.NO:111)****
10. How will you prepared the following using Grignard reagent
    i) t- butyl alcohol ii) allyl alcohol (In.P.NO:110E/Y)
11. Give any two test to differentiate phenol and alcohol(In.P.NO:131)****
12. Write a note on auto oxidation of ethers (In.P.NO:137)
13. Explain the saytzeff's rule (In. P.NO:116)
i) How the following conversion are effected
    phenol → salicyladehyde (In.P.NO:130)   phenol→1,4 dioxane (In.P.NO:120)
    phenol→phenolphthalein (In. P.NO:131)
14. Write notes on i) Dow'sprocess (In.P.NO:126)
    ii) Reimer Tiemann Reaction(In.P.NO:130)
15. Write note Biological oxidation (In.P.NO:118)
ii) mention the uses of phenol(2) (In.P.NO:131)
16. How can you convert phenol into a)Picricacidand (In.P.NO:129)
    b)Anisole(In.P.NO:128)
17. Short notes on schotten-Baumann reaction.(In.P.NO:127)****
18. How is phenolphthale in is prepared?(In.P.NO:131) ****
19. Write note on swern oxidation (In.P.NO:117)
    and schotten - baumann reaction.(In.P.NO:127)
20. Give four uses of diethylether?(In.P.NO:138)****
21. How will you prepare 2-methylhexan-2-ol from Grignard reagent?
22. What are the test to differentiate ethanol and phenol?(In.P.NO:131)****
23. How will you prepared from glycerol to acrolein (In.P.NO:121)****

NOTES