

14. Draw sawhorse structure of ethane molecule

15. Define ionization energy and explain its variation along the period

ANSWER ANY 8 QUESTIONS FROM 16 TO 25 .EACH CARRIES 3 MARK (8x3=24)

16. An organic compound analysis gave the following composition. Carbon 40% , hydrogen 6.66% ,oxygen 53.47% .calculate its empirical and molecular formula (molar mass of the compound is 90)

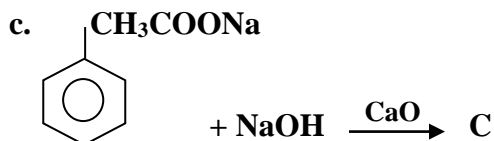
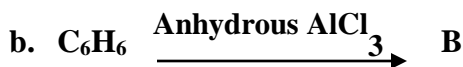
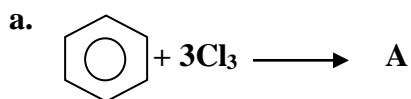
17. State Heisenberg's uncertainty principle . give its significance

18.

a. What do you mean by isoelectronic species . give example

b. Give the IUPAC name of element having atomic number 108

19. Find the product A,B and C of the following reactions

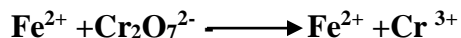


20. Define hybridization .Explain the hybridization of NH₃ molecule.

21. Explain common ion effect with an example

22. Explain the detection of nitrogen by Lassaignes test.

23. Balance the following redox reaction by oxidation number method in acidic medium



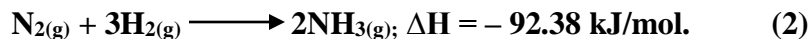
24. Draw and Explain the determination lattice enthalpy of NaCl by Bohn Haber cycle

25. Write the postulates of Bohr atom model and write any two merits of Bohr atom model

ANSWER ANY 4 QUESTIONS FROM 26 TO 30 .EACH CARRIES 4 MARK (4x4=16)

26. a . State Le Chatelier's principle (2)

b . What are the effects of the following changes in the equilibrium process?



(A) Increasing the pressure

(B) Increasing the temperature

(C) Removal of NH_3 from the reaction vessel.

27. Draw the molecular orbital diagram of O_2 molecule .calculate its bond order



a . Predict A and B . (1)

b . Which is the major product (1)

c . Identify the rule applied here (1)

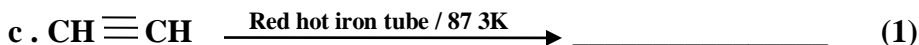
d . State that rule (1)

29. a . What are the postulates of Rutherford atom model (2)

b . Write the drawbacks of Rutherford atom model (2)



b . Name the above reaction (1)



d.

