

FIRST MID TERM TEST - 2024

Standard XII

Reg No.

CHEMISTRY

Time : 1.30 hrs

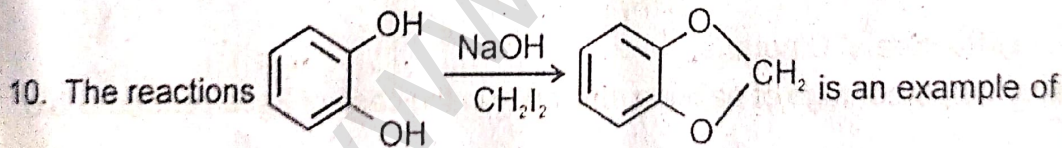
Part - I

Marks : 50

10 x 1 = 10

I. Choose the correct answer:

- Zinc is obtained from ZnO by
 - carbon reduction
 - reduction using silver
 - electrochemical process
 - acid leaching
- If E^0 is positive then the ΔG is negative and the reaction is
 - spontaneous
 - equilibrium
 - non-spontaneous
 - none of the above
- An aqueous solution of borax is
 - neutral
 - acidic
 - basic
 - amphoteric
- Which of the following is not correct?
 - Beryl is acyclic silicate
 - Mg_2SiO_4 is an orthosilicate
 - SiO_4^{2-} is the basic structural unit of silicate
 - Feldspar is not aluminosilicate
- Graphite and diamond are
 - covalent and molecular crystals
 - ionic and covalent crystals
 - both covalent crystals
 - both molecular crystals
- In calcium fluoride, having the fluorite structure the co-ordination number of Ca^{2+} ion and F ion are
 - 4 and 2
 - 6 and 6
 - 8 and 4
 - 4 and 8
- The rate law of the reaction is $Rate = k[Br^-][BrO_3^-][H^+]^2$, then the total order of reaction is
 - 1
 - 3
 - 2
 - 4
- The decomposition of phosphine (NH_3) on tungsten at low pressure is a first order reaction. It is because the
 - rate is proportional to the surface coverage
 - rate is inversely proportional to the surface coverage
 - rate is independent of the surface coverage
 - rate of decomposition is slow
- Which one of the following is strongest acid?
 - 2-nitrophenol
 - 4-dichlorophenol
 - 4-nitrophenol
 - 3-nitrophenol



- Wurtz reaction
- cyclic reaction
- Williamson reaction
- Kolbe reaction

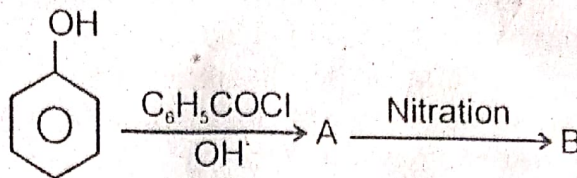
Part - II

II. Answer any 5 questions. (Q.No.18 is compulsory)

5 x 2 = 10

- Write the difference between minerals and ores.
- Describe the role of the following in the process mentioned.
 - Silica in the extraction of copper
 - Cryolite in the extraction of aluminium

13. Give the uses of Borax.
14. Define Unit cell.
15. Calculate the number of atoms in fcc, bcc unit cell.
16. Define rate law and rate constant.
17. Write Arrhenius equation and explain the terms involved.
18. Complete the following reactions.



Part - III

III. Answer any 5 questions. (Q.No.26 is compulsory)

5 x 3 = 15

19. Describe the method for refining Nickel.
20. Give the structure of CO₂.
21. How will you identify borate radical.
22. Distinguish tetrahedral and octahedral voids.
23. Explain Schottky defect.
24. Identify the order for the following reactions.
 - i) Rusting of iron
 - ii) Radioactive disintegration of ⁹²U
 - iii) 2A + 3B → Product rate = k [A] [B]
25. Define Saytzeff's rule.
26. The rate constant for the first order reaction is 1.54 x 10⁻³ S⁻¹, calculate its Half-Life time.

Part - IV

IV. Answer all the questions.

3 x 5 = 15

27. a) Explain the method of froth flotation.
(OR)
- b) Explain the structure of Diborane.
28. a) Calculating the percentage of packing efficiency in the case of Face centred cubic crystal.
(OR)
- b) i) Difference between order of reaction and molecularity of the reaction.
ii) What are the factors are affecting the rate of the reaction.
29. a) How will you distinguish the alcohol in Victor Mayer method.
(OR)
- b) i) Write Phthalein reaction.
ii) How is acrolein prepared?
