

MODEL QUESTION PAPER

CHEMISTRY

Section A

Answer any 4 questions from 1-5. Each question carries 1 score.

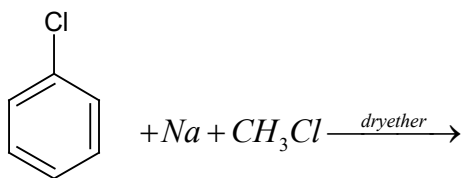
1. E° value of standard hydrogen electrode is _____.
2. Which of the following forms coloured compounds?
a) Sc^{3+} b) Cr^{2+} c) Zn^{3+} d) Cu^+
3. Chlorophyll is a coordination compound of _____ metal.
4. What is the chemical name of aspirin?
5. Dipolar structure of amino acid is _____.

[4 x 1 = 4]

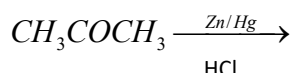
Section B

Answer any 8 questions from 6-15. Each question carries 2 scores.

6. State Henry's law.
7. How do conductivity and molar conductivity vary with concentration of electrolytes?
8. What is pseudo first order reaction? Give an example.
9. Zr and Hf have similar atomic radius. Why?
10. Write IUPAC names of the following complexes.
a) $[\text{Ni}(\text{CO})_4]$ b) $\text{K}_4[\text{Fe}(\text{CN})_6]$
11. Complete the following reaction and name the reaction.



12. Phenols are acidic. Why?
13. How will you distinguish between CH_3CHO and CH_3COCH_3 ?
14. Write the product of the following reaction.



15. How will you convert aniline to phenol? [8 x 2 = 16]

Section C

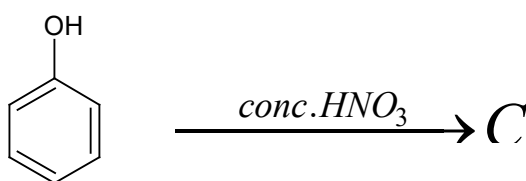
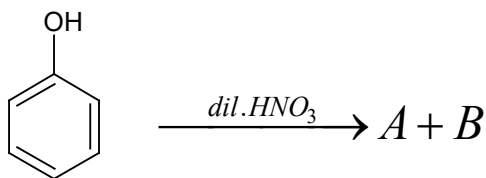
Answer any 8 questions from 16-26. Each question carries 3 scores.

16. What is reverse osmosis? Write one application.
17. Which type of deviation is exhibited by a solution of chloroform and acetone? Draw the diagram.
18. What are fuel cells? Write the electrode reactions of H₂-O₂ fuel cell.
19. a) Represent the cell in which the following reaction takes place.

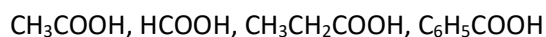


b) Calculate its E_{cell} , if $E^{\circ}_{\text{cell}} = 3.17\text{V}$

20. Write any three differences between order and molecularity.
21. Write the steps involved in the method of preparation of K₂Cr₂O₇ from chromite ore.
22. [Fe(H₂O)₆]³⁺ is strongly paramagnetic whereas [Fe(CN)₆]³⁻ is weakly paramagnetic. Explain.
23. Write any three differences between SN₁ and SN₂ reactions.
24. Identify the products A, B and C.



25. Arrange the following in the increasing order of acidity. Justify your answer.



26. How will you distinguish among 1^o, 2^o and 3^o amines.

[8 X 3 = 24]

Section D

Answer any 4 questions from 27-31. Each question carries 4 scores.

27. a) Write Arrhenius equation.
- b) The rate constants of a reaction at 500K and 700K are 0.02s⁻¹ and 0.07s⁻¹ respectively. Calculate the value of E_a.
28. Explain the structural isomerism shown by coordination compounds.

29. Explain the following reactions.

- a) Sandmeyer's reaction
- b) Reimer-Tiemann reaction

30. Write a note on

- a) HVZ reaction
- b) Aldol condensation

31. a) Write the differences between DNA and RNA.

b) What is denaturation of protein? Give example.

[4 X 4 = 16]

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