



DCCH101

Reg. No.

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I Semester B.Sc. Degree Examination, May/June - 2022

CHEMISTRY

(NEP CBCS Scheme 2021-22 Onwards)

Paper - DSC - I

Time : 2½ Hours

Maximum Marks : 60

Instructions to Candidates :

LIBRARY
VIJAYA COLLEGE
Jayanagar IV Block
Bangalore-560 011

- i) Question paper has Three parts, Answer All the parts.
- ii) Write chemical equations and diagrams wherever necessary.

PART - A

Answer any Five of the following questions. Each question carries Two Marks.
(5×2=10)

1. Write de-Broglie equation and mention the terms in it.
2. Mention the number of significant figures in
 - i) 200.01
 - ii) 6.626×10^{-34}
3. What are f-block elements? Write the general electronic configuration.
4. What is a nucleophile? Give an example.
5. Mention two precautions to be taken while handling toxic chemicals.
6. Write the structure of 2-methyl-3-pentyne.

PART - B

Answer any Four of the following questions Each question carries Five marks.
(4×5=20)

7. What is gravimetric analysis? Discuss the general rules for quantitative determination by gravimetric method. (5)
8. a) Mention the significance of Principal and magnetic quantum number.
b) Define Eigen function. (4+1)

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9. a) Mention the factors affecting ionisation enthalpy of elements.
b) Why is size of a cation less than its parent atom? (3+2)
10. a) Mention the hybridisation and shape of
i) Ethene
ii) Ethyne
b) What is homolytic cleavage? (4+1)
11. a) Draw the titration curve for weak acid versus strong base. Indicate the equivalence point PH.
b) How does the acidic nature of the oxides of P-block elements vary across a period and down a group? (3+2)
12. a) State saytzeff rule Illustrate with an example.
b) Calculate the median of the following titration results (ml)
10.1, 10.0, 9.9, 10.2, 10.1 (3+2)

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PART - C

Answer any Three of the following. questions Each question carries Ten marks.

13. a) What are determinate errors? Discuss different types of determinate errors.
b) Mention the different methods of drying solids. (3×10=30)
14. a) Derive an expression for energy of a particle in one-dimensional box.
b) Draw the radial probability distribution curve for 2s orbital.
c) Explain shielding effect. (6+4)
15. a) Discuss the trends in the hydrides of group 13 and group 16.
b) Between fluorine and chlorine, which has higher gain enthalpy? Why?
c) Write an equation to determine electronegativity by Pauling scale. (6+2+2)
16. a) Discuss the mechanism of addition of HBr to propene.
b) Explain 1,2 and 1,4 addition of 1,3 butadiene with an example.
c) What is antiaromaticity? Give the examples. (4+4+2)
17. a) Define ionization enthalpy. How does it vary across a period & down a group.
b) Define
i) Precision
ii) Hamiltonian operator.
c) Explain inductive effect with an example. (4+4+2)