

3006

B.Tech. (Common for All Branches) 2nd Semester
(G-Scheme) Examination, July-2022

CHEMISTRY-I

Paper- BSC-CH-101-G

Time allowed : 3 hours]

[Maximum marks : 75

Note : Question No. 1 is compulsory. Students have to attempt five questions in total selecting one question from each unit.

1. (a) What do you mean by centre of symmetry?
- (b) Discuss emission spectroscopy in brief.
- (c) Why do halogen atoms have strong electron affinity
- (d) Define Pilling Bedworth rule.
- (e) What are ion exchange resins?
- (f) What is Markonikov's Rule? 6×2.5

Unit - I

2. (a) What is crystal field theory? Discuss its postulates with suitable example. 8
- (b) Discuss Pi-molecular orbital diagram of benzene. 7
3. (a) Discuss the band structure of solid. 5
- (b) Explain the molecular orbital energy level diagram of oxygen molecule 7

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- (c) Explain why the reducing power decreases as we move from left to right in a period? 3

Unit - II

4. (a) Write the differences between SN^1 and SN^2 . Discuss with suitable example in detail. 6
(b) Write down the chemical reaction for the synthesis of paracetamol. 5
(c) Write short on addition reactions. 4
5. (a) Discuss the Isomerisms in transitional metal compound. 6
(b) Define Geometrical isomers with suitable example. 4
(c) Write the conformation of Butane molecules with suitable energy level diagram. 5

Unit - III

6. (a) Describe the demineralisation process for water softening of hard water. Discuss its advantage and disadvantages. 8
(b) Discuss the EDTA method for determine the hardness of water. 7
7. (a) Write the differences between dry corrosion and wet corrosion. 6
(b) Discuss the various factor effecting corrosion. 9

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Unit - IV

8. (a) Describe the Principle and application of IR Spectroscopy. 9
(b) Write short note on nuclear magnetic resonance. 6
9. (a) Discuss the principle and application of flame photometry. 8
(b) Write short note on magnetic resonance imaging. 7

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