Code: 15A51103 **R15**

B.Tech I Year I Semester (R15) Supplementary Examinations November/December 2019

BASIC CHEMISTRY

(Food Technology)

Time: 3 hours Max. Marks: 70

PART – A

(Compulsory Question)

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1 Answer the following: (10 X 02 = 20 Marks)

(a) What is meant by entropy?
(b) What is meant by redox reaction?
(c) What is meant by order of reaction?
(d) What does valency bond theory explain?
(e) What are the important components in terms of instrumentation of Microwave spectroscopy?
(f) What is meant by IR spectroscopy? Give its important applications.
(g) What is meant by polymerization?
(h) What is meant by Friedel Craft Alkylation?
(i) Define the degree of freedom.
(j) What are important properties of colloids?

PART – B

(Answer all five units, 5 X 10 = 50 Marks)

UNIT – I

2 (a) What do you understand by thermodynamic system and surroundings?
(b) Describe the important applications of emf measurements.

OR

3 (a) Give an account of electrochemical series and its applications.
(b) Explain about electrochemical cells.

UNIT – II

4 (a) What do you understand by the term rate-determining steep of a complex reaction? What is steady-state hypothesis?
(b) What are bonding and antibonding molecular orbitals?

OR

5 (a) Write short notes on parallel reactions?
(b) Draw molecular orbital diagram for NO molecule.

UNIT – III

6 (a) Which selection rule is used in Infrared spectroscopy? Explain about finger print region.
(b) Explain why $[Ni(CO)_4]$ is tetrahedral, $[Ni(H_2O)_6]^{2+}$ is square planar and $[Ni(NH_3)_6]^{2+}$ is octahedral using valence bond theory.

OR

7 (a) Briefly explain the Beer-Lambert's law and give its applications.
(b) Brief account on Haemoglobin with respect to metal ion.

UNIT – IV

8 (a) Write short notes on Perkin's reaction.
(b) Illustrate the details of Papaverine.

OR

9 (a) Write short notes on Toxol.
(b) What are Biomolecules? Explain aminoacids.

UNIT – V

10 (a) State and Explain the phase role.
(b) Explain basic principle of TLC and what are its usefulness?

OR

11 (a) Draw and explain the phase diagram of water system, i.e. one-component system.
(b) What are different separation techniques? Explain crystallization.

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