

Roll No.

Total No. of Questions : 09]

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B. Tech. (Sem. - 1st/2nd)

ENGINEERING CHEMISTRY

SUBJECT CODE : CH - 101 (2k4 & Onwards)

Paper ID : [A0112]

[Note : Please fill subject code and paper ID on OMR]

Time : 03 Hours

Maximum Marks : 60

Instruction to Candidates:

- 1) Section - A is **Compulsory**.
- 2) Attempt any **Five** questions from Section - B & C.
- 3) Selecting at least **Two** questions from Section - B & C.

Section - A

Q1)

[Marks : 2 Each]

- a) What do you understand by R_f value?
- b) Differentiate phosphorescence from fluorescence.
- c) What is the range of IR radiation used for IR spectrometer? What type of information is obtained from IR study of organic molecule?
- d) What happens when temporary hard water is boiled? Write the chemical reactions.
- e) What is dry corrosion?
- f) What is the difference between critical point and triple point?
- g) What do you understand by MRI?
- h) Why impure metal corrodes faster than pure metal under identical conditions?
- i) What is over voltage?
- j) Discuss quantum yield.

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Section - B

[Marks : 8 Each]

- Q2)** (a) Discuss ion exchange method for water softening.
(b) How desalination of water can be achieved by reverse osmosis?
- Q3)** (a) Define corrosion. Describe soil corrosion.
(b) What do you understand by wet corrosion?
- Q4)** (a) How chromatographic separation methods can be classified?
(b) Briefly discuss the applications of chromatography.
- Q5)** (a) Discuss conductometric titration of a weak acid against strong base.
(b) Describe redox indicators.

Section - C

[Marks : 8 Each]

- Q6)** (a) What do you understand by spin-spin coupling?
(b) Discuss spin-lattice relaxation.
- Q7)** Draw and discuss briefly phase diagram of lead-silver system.
- Q8)** Write short notes on :
(a) Photosensitised reactions.
(b) Masers.
- Q9)** (a) Discuss the theory of UV-visible spectroscopy.
(b) Discuss Franck-Condon principle.

