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Total No. of Questions : 09] [Total No. of Pages : 02

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.

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.

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