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Total No. of Questions: 09

B.Tech. (2009-2010 Batches) (Sem.-1,2) ENGINEERING CHEMISTRY Subject Code: CH-101

Paper ID: [A0110]

Time: 3 Hrs. Max. Marks: 60

## **INSTRUCTION TO CANDIDATES:**

- SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
- 2. SECTION B &C. have FOUR questions each.
- 3. Attempt any FIVE questions from SECTION-B & C carrying EIGHT marks each.
- 4. Select atleast TWO questions from SECTION-B & C.

## **SECTION-A**

## 1. Write briefly:

- (a) What is saline water?
- (b) Give the cause of corrosion.
- (c) Name the two phases of chromatography.
- (d) What are indicators? Give examples.
- (e) Give the full name of MASERS and LASERS.
- (f) What is ultraviolet and visible spectroscopy known as?
- (g) What is NMR and MRS?
- (h) What is a phase and a component?
- (i) Give no of signals in Benzene and Nitrobenzene.
- (j) Calculate the value of Einstein of energy in electron volts for radiation of frequency  $3\times10^{15}$ .

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## **SECTION-B**

2	a) What is boiler feed water and boiler corrosion?	(4)
	b) Explain any two methods of water softening.	(4)
3	Give protective measurement of corrosion.	(8)
4	Give flow diagram of LC instrument.	(8)
5	Can we use a copper vessel to store 1 M Ag NO <sub>3</sub> solution? ( $\rm E^{\circ}_{Cu}^{+2}/_{Cu}$ $\rm E^{\circ}_{Ag}^{+1}/_{Ag} = +0.80V$ )	= +0.34V (8)
	SECTION-C	
6	Give the difference between fluorescence and phosphorescence.	(8)
7	Give principle and application of IR.	(8)
8	Explain the no of signals and hyperfine structure with suitable examples.	(8)

Explain phase diagram of one component system- water and carbon dioxide.

(8)