G.R. No.

Paper Code - U119 -1011 (T1)

OCTOBER 2019 / INSEM (T1)

F. Y. B.TECH. (COMMON) (SEMESTER - I)

COURSE NAME: Engineering Chemistry

COURSE CODE: ES10184B

(PATTERN 2018)

[Max. Marks: 20]

Time: [1 Hour]

(*) Instructions to candidates:
1) All questions are compulsory.
2) Figures to the right indicate full marks.
3) Use of scientific calculator is allowed.
4) Use suitable data where ever required.

Q.1) Attempt any **two**
   a) Explain electrodialysis process with definition, figure and principle involved [4] alongwith 2 applications
   b) 50 ml of an alkaline water sample requires 14.1 ml of N/50 HCl upto [4] phenolphthalein end point and 21.4 ml for complete neutralization. Find the type and amount of alkalinity
   c) Compare scales and sludges (Give 4 points of comparison) [4]

Q.2) Attempt any **two**
   a) Calculate λ_{max} for the following compounds (Explain calculations): [2+2]
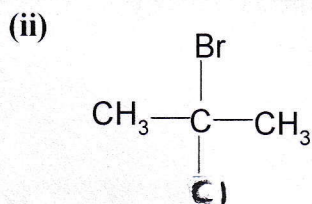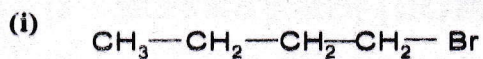   (i)
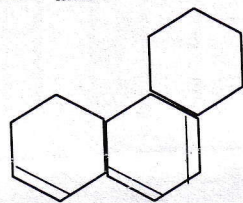
      (ii)
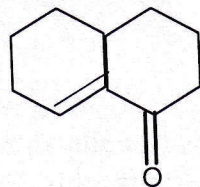
   b) i) How can you distinguish between cyclohexanol and cyclohexanone by IR [2+2] spectroscopy?

ii) Calculate possible number of fundamental vibrations in CH_4 and H_2O

c) Draw the low and high resolution spectra of the following   [2+2]

(i)
$$CH_3—CH_2—CH_2—CH_2—Br$$

(ii)

$$CH_3—\underset{\underset{Cl}{|}}{\overset{\overset{Br}{|}}{C}}—CH_3$$

Q.3)   Attempt any **one**
a) Define corrosion. Explain hydrogen evolution mechanism of wet corrosion   [4]
b) Explain galvanization with figure and process   [4]