

CARMEL COLLEGE OF ARTS, SCIENCE & COMMERCE FOR
WOMEN, NUVEM-GOA

SEMESTER END EXAMINATION JULY 2021

Semester: VI of B.Sc.

Course name & Code: Selected Instrumentation in Analytical Chemistry CHD103

Date: 17/07/2021 Duration: 2 hours Total No of pages: 02 Total marks - 30

Q1. Answer ANY 5 of the following questions

(2x5=10M)

- Enlist deviations from Beer Lambert's Law
- What is the principle of UV-visible Spectroscopy?
- With the help of a neat and labelled diagram explain the working of any one type of burner used in atomic absorption spectroscopy.
- Explain the effect of polar solvents on separation of mixture of components in HPLC
- State the differences between single beam and double beam mass spectrometry instruments. 6.
- Explain the principle involved in flame photometry
- Describe any 2 components used in the instrumentation of GC.
- What are the basic components of instruments for analysis?

Q2. Answer ANY 4 of the following questions

(4x5=20M)

- With the help of a neat labelled diagram explain the DTA technique
- The concentration of a standard solution of iron chelate is 0.6mg of iron /mL. The percentage transmittance by this solution when placed in a cell of 2 cm thickness is 70. An unknown solution when placed in the same cell transmit 80% light. Find out
 - The absorbance & absorptivities of both these solutions
 - The concentration of the unknown solution
 - The absorbance of the unknown solution if its concentration is tripled
- State Bragg's law and derive its mathematical equation.
- With a neat labelled diagram explain electron impact ionization.
- Give a schematic representation or block diagram representation for the set-up of HPLC technique. Also explain all the components used in the instrumentation.
- With the help of a neat labelled diagram explain the working of single beam fluorimeter.