

Q-2 Attempt ANY SEVEN from the following: (14)

1. What is auxochromic effect?
2. How temperature and turbidity of solute and solutions affects Beer's law?
3. Draw block diagram of single beam spectrophotometer.
4. What is the principle of ESR?
5. How thermocouple works?
6. Write the principle of fluorescence spectroscopy.
7. Why tetramethyl silane (TMS) is used as a reference material in NMR?
8. Give the principle of radioimmunoassay.
9. What is reverse isotopic dilution method?

Q-3 (a) Give a detailed account on Beer's and Lambert's law. (06)
(b) Discuss the applications of UV Visible spectrophotometer in life sciences. (06)

OR

(b) Explain radiation sources and detectors used in UV Visible spectrophotometer. (06)

Q-4 (a) Draw schematic diagram of IR spectroscopy. Explain sample preparation for it. (06)
(b) Describe instrumentation of AAS in detail. (06)

OR

(b) Give advantages and disadvantages of AES. (06)

Q-5 (a) Discuss various applications of fluorescence spectrophotometer. (06)
(b) Give a detailed account on chemical shift with suitable examples. (06)

OR

(b) Write as detailed note on MALDI-TOF. (06)

Q-6 (a) Discuss any two methods used for radiation detection. (06)
(b) Write a detailed note on: Nuclear active analysis method (06)

OR

(b) Give an account on radio ligand assay. (06)
