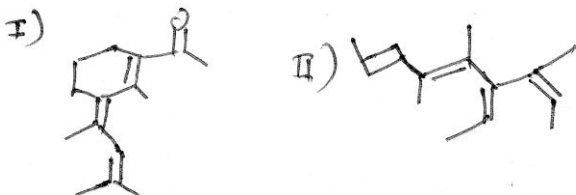


Please check whether you have got the right question paper.

- N.B:
1. All questions are compulsory.
 2. All questions carry equal marks.
 3. Draw well labelled diagram wherever necessary.

Q. 1 Answer the following (**Any Two**) (20)

- a) Give the construction and working of PMT and applications of AAS in detail.
- b) Give the principle working and applications of IR spectroscopy.
- c) Explain with suitable diagram working of premix burner and Nebulizer.
- d) i) Explain Red and Blue shift with suitable example.
ii) Calculate the λ_{max} of following compounds.



Q. 2 Answer the following (**Any Two**) (20)

- a) What are adulterants? Give their different types with example and also give the effects of adulterants.
- b) Explain in detail food additives.
- c) Give the analysis of milk in detail.
- d) Give the analysis of adulterated mustard seeds and oil in detail.

Q. 3 Answer the following. (**Any Two**) (20)

- a) Describe Ziegler-Natta process with the help of suitable example and give the uses of PVC in detail.
- b) Give the chemical synthesis, properties applications of phenolphthalein and methyl orange.
- c) Describe witt's theory of Dye and give the classification of dye with suitable example.
- d) Explain any two Analytical Technique used in Ink analysis.

Q. 4 Write short note (**Any Three**) (15)

- a) Absorption Spectroscopy
- b) F.P and F.G region in IR
- c) Chromophore and Auxochrome
- d) Natural adulterants
- e) Polyethylene
