Roll No. ☐☐☐☐☐☐☐☐☐☐☐   Total No. of Pages : 01

Total No. of Questions : 08

M.Tech.(Food Technology) (2018 Batch)   (Sem.–1)
ADVANCES IN FOOD ANALYSIS
Subject Code : MTFT-512-18
M.Code : 75599

Time : 3 Hrs.   Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :
1. Attempt any FIVE questions out of EIGHT questions.
2. Each question carries TWELVE marks.

1. a) Write the principle of spectroscopy. Explain working of UV-visible spectrophotometer and its application in food Industry.   4

    b) What is FTIR spectroscopy? How the FTIR spectra results are interpreted?   4

    c) How the emission spectroscopy is helpful in food analysis?   4

2. a) What are different types of emission and absorption spectroscopy. Explain working of flame photometery.   8

    b) What is Fluorescence spectroscopy? How the spectrofluoromieter works?   4

3. a) How TLC works? Explain with example the application of TLC in food analysis.   6

    b) Draw a schematic diagram of a gas chromatograph and explain function of each part. 6

4. a) What different types of detectors are used in chromatographic analysis. Explain working of Thermal conductivity (TCD), Flame ionization (FID) detectors.   2+6

    b) How chromatography is used in the analysis of vitamins in food samples? Explain with example.   4

5. Write the principle of SEM. Write its importance in food analysis. Discuss the application of SEM in food product development and quality control with suitable examples.   3+4+5

6. Draw a DSC chromatogram. How DSC analysis results are interpreted? How the result outputs of DSC and glass transition temperature analysis are used in food quality control and product development? Discuss.   2+2+8

7. What is particle size analyzer? Write its basic principle. What are various types of particle size analyzer? Explain the working and application of PSA in food industry.   2+2+8

8. Explain the theory of electrophoresis. Differentiate between SDS-PAGE and electrophoreses. How the molecular weight of food samples proteins is calculated by SDS-PAGE analysis.   3+2+7

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.