

1129

**B. Voc. (Food Processing and Preservation)**  
**Third Semester**  
**FPP-304: Food Analysis: Tools and Techniques**

**Time allowed: 3 Hours****Max. Marks: 40**

**NOTE:** Attempt five questions in all, including Question No. 1 which is compulsory and selecting one question from each Unit.

x-x-x

I. Answer the following briefly:-

- a) ELISA
- b) Fluorescent microscopy
- c) Bacterial toxins
- d) Ion exchange chromatography (4x2)

**UNIT – I**

- II. a) Write a short note on the procedure for microbial analysis.  
b) Explain the concept of moisture and water holding capacity of different food items. (2x4)
- III. Discuss the methods for quantitative methods for microbial enumeration? (8)

**UNIT – II**

- IV. a) Discuss the principle and applications of Gel filtration chromatography.  
b) Describe the sample preparation for TEM. (2x4)
- V. Differentiate between Paper and Thin layer chromatography. (8)

**UNIT – III**

- VI. Write short notes on:-  
a) Application of Centrifugation  
b) Principle of Electrophoresis (2x4)
- VII. What are the techniques used to detect contaminants in raw and packaged food? (8)

**UNIT – IV**

- VIII. a) Explain the principle of GC-MS.  
b) Discuss the applications of HPLC. (2x4)
- IX. Describe the principle and applications of PCR. (8)

x-x-x