

Diploma Course (MICROBIAL ANALYSIS AND FOOD SAFETY)
(Semester II)
MFS-203: ANALYTICAL QUALITY ASSURANCE IN FOOD LABORATORIES

Max. Marks: 40

Time allowed: 3 hrs.

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

Q1. Each question carry equal marks (1)

- a) What is referral and notified laboratory?
- b) What is the working temperature of denaturation, annealing and extension steps of PCR?
- c) What is the principle of DNA Microarray?
- d) How LATEX Agglutination assay functions?
- e) What are electrochemical and piezoelectric NPs?
- f) What is Sandwich ELISA?
- g) What is a the Principle behind the atomic absorption spectrophotometry
- h) What is 2D Gel Electrophoresis?

UNIT-I

Q2. I) a) What are the various functions of the referral laboratory? (4)

b) Explain Principles and Requirements of Good Laboratory Practices? (4)

II) a) What is GLP. Explain various Functions and Power of GLP Authority? (4)

b) What are the various steps for analysis of food samples by Food Analyst? (4)

UNIT-II

Q2. I) Explain the principles, types and application of spectroscopy (8)

II) Explain Principles and applications of NIR and X-ray diffraction in food analysis? (8)

UNIT-III

Q2. I) a) How Multiplex and Real Time PCR differ from the Conventional PCR? (4)

b) Explain Direct and In-direct ELISA? (4)

II) Explain various steps of DNA Microarray. What are the various applications of DNA Microarray? (6, 2)

UNIT-IV

Q2. I) a) Explain the working of Biosensors and its applications in the food industry? (4)

b) Write a short note on quantum dot (QD) NPs, metal NPs, silica NPs, and magnetic NPs? (4)

II) a) Write the advantages of nanoparticle based biosensors over conventional methods? (4)

b) Explain principle and working of various biosensor kits commonly used for detection of food pathogens? (4)