

2072

B. Voc. (Food Processing and Preservation)

Second Semester

FPP-204: Industrial Safety Hazards and Prevention

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. Assume any missing data, make neat and labelled diagrams. All questions carry equal marks.

x-x-x

1. Attempt the following:-

- a) What do you mean by Safety display?
- b) What are the main causes of an industrial accident?
- c) Describe the safety limits of toxicity?
- d) What is Fault tree method for industrial safety?
- e) List the microbial contaminants causing health hazards.
- f) Name microbiological methods for isolation of food microbes.
- g) Define threshold limit value, permissible exposure limit and LD50 with examples.
- h) what are the components of a fire triangle?

Unit- I

- 2 a) Explain origin of process hazards.
- b) Define different law codes. Also explain different industrial safety standards.
- c) What are the five types of workplace hazards and steps to mitigate employee risk?
- 3 a) What are the 4 OSHA standards?
- b) What substances are hazardous to health?
- c) Describe Nine hazardous substances symbols

Unit- II

- 4 a) What do you mean by Biological contamination. What are microbiological threats to Food safety?
- b) Describe in details hazards caused by molds and viruses.
- c) How can microbial contamination be prevented or controlled during food processing?
- 5 a) What are the most important methods for detecting the microorganisms from food?
- b) describe any four methods for enumeration of microbes in food?
- c) Describe culture turbidity method.

Unit- III

- 6 a) What is food toxicology? What are the responsibilities of a food toxicologist? What is/are the basic principle(s) of food toxicology?
- b) What are the 6 classes of toxins? Also explain predictive models for toxicology response. What is QSAR in toxicology?
- c) Write detailed note on MSDS(s) with few examples. What do you mean by industrial hygiene evaluation? Explain in detail.



(2)

- 7 a) What are the steps involved in evaluation of food toxicity? Explain in detail.  
b) What is a toxicity assay? What is a typical test developed to evaluate food toxicity? Describe some toxic materials and their properties in relation to food processing.  
c) Describe effect of dose and exposure time.

#### Unit- IV

- 8 a) Explain common causes of industrial fires. What is the difference between a fire and an Explosion?  
b) Define portable fire extinguishers and their types. Also explain foam based fire extinguishers and their working.  
c) Explain fire triangle in detail, propagation of fire and preventive methods?
- 9 a) What are dry chemical fire extinguishing systems?  
b) What are environmental factors for fire spreading/control? Explain ventilation and sprinkling in relation to fire prevention.  
c) Describe in detail fire safety methods and relief valves. Define HAZOP study and its types.

x-x-x