AT–367

B.Sc. (Part—II) Semester—IV Examination

4S : INDUSTRIAL MICROBIOLOGY

(Food Dairy Microbiology and Biostatistics)

Time : Three Hours] [Maximum Marks : 80

Note :— (1) **ALL** questions are compulsory and question **1** is objective type without any internal alternate choice.

(2) Q. No. **2** to Q. No. **7** have equal marks and with internal alternate choice.

(3) Draw neat and labelled diagrams wherever necessary.

1. (A) Fill in the blanks : 2

(i) A _____ (short for picture diagram) is a way of showing data using pictures.

(ii) Botulism is caused by _____.

(iii) Gamma rays are _____ radiation.

(iv) Butter consists primarily of milk _____.

(B) Choose the correct option for following questions : 2

(i) The test performed for grading of raw milk is _____

(a) Widal test (b) Ames test

(c) Coagulase test (d) MBR test

(ii) _____ is the major protein present in milk.

(a) Lactoglobulin (b) Casein

(c) Myosin (d) Lactalbumin

(iii) Salmonellosis is a type of _____.

(a) Food intoxication (b) Food intention

(c) Both (a) and (b) (d) None of the above

(iv) Measurement of central tendency is possible by :

(a) Size (b) Conclusion

(c) Mean (d) Result

(C) Answer the following in **one** sentence each :

(i) Define Sample. 1

(ii) Food intoxication. 1

(iii) Blanching. 1

(iv) Perishable food. 1

2. What is Canning ? Describe in detail any two methods of preservation of food materials. 12

OR

Define fresh food and describe in detail food poisoning with suitable examples. 12

3. Describe the following in brief :

(a) Sources of microbes in milk. 4

(b) Grades of milk. 4

(c) HTST method of Pasteurization. 4

OR

(d) Types of microorganisms from milk. 4

(e) Phosphatase test. 4

(f) LHT method of Pasteurization. 4

4. Describe in detail industrial production of Sauerkraut. Add a note on spoilage of Sauerkraut. 12

OR

What is fermentation ? Describe in detail commercial production of Pickles. 12

5. Describe in brief the following :

(a) Production of KEFIR. 4

(b) Spoilage of fermented milk product. 4

(c) Acidophilus milk. 4

OR

(d) Make a list of different fermented milk products and give their Nutritional value. 4

(e) How the fermented milk products are tested ? 4

(f) Briefly describe various pathogens present in milk products. 4

6. Describe in brief the following meat and fishery products :

(a) Sea food 4

(b) Cured hams 4

(c) Processed meat. 4

OR

(d) Fermented Sausage 4

(e) Fish Sausages 4

(f) Poultry product. 4

7. Describe the following in brief :

(a) Any one method of presentation of statistical data. 4

(b) Chi square test and its any one application. 4

(c) Types of correlation. 4

OR

(d) Histogram with suitable example. 4

(e) What is graphical presentation of data ? Give its advantages and disadvantages. 4

(f) Define the following :

(i) Sample

(ii) Parameter

(iii) Data

(iv) Observation. 4