(i) Printed Pages: 3 Roll No. .....

(ii) Questions : 9 Sub. Code : 0 3 7 6

Exam. Code : 0 0 0 4

B.A./B.Sc. (General) 4th Semester

(2054)

INDUSTRIAL MICROBIOLOGY (Elective)

Paper : IMB-401 Food Microbiology

Time Allowed : Three Hours] [Maximum Marks : 33

Note :—Attempt **FIVE** questions in all, selecting **ONE** each from Sections A to D. Q. No. 1 is compulsory.

1. Answer briefly :

(a) Spoilage

(b) Food intoxication

(c) D-Value

(d) Sodium benzoate as food preservative

(e) Ropiness. 1×5=5

SECTION—A

2. (a) Explain the production process and microbiology of vinegar.

(b) Describe the production process of soya sauce.

2×3½=7

3. (a) Discuss the role of microbes in producing fermented meat products with suitable examples.

(b) Which alcoholic beverages are produced with the help of microbes ? Explain the production of any one at the commercial level. 2×3½=7

SECTION—B

4. (a) Describe the mechanism of preservation using sulfur dioxide, Acetic acid and wood smoke.

(b) For the preservation of dairy products which methods you will prefer ? Explain with reasons. 2×3½=7

5. Write a note on the following :

(a) Asepsis and canning methods of preservation

(b) Pasteurization, its types and applications. 2×3½=7

SECTION—C

6. (a) Define food spoilage. Describe the spoilage of meats and the major causative agents involved in spoilage.

(b) Which human pathogens are commonly found in food ? How microbes can act as indicators of human pathogens in food ? 2×3½=7

7. Describe the following :

(a) Spoilage indicators of cheese and butter milk.

(b) Representative spoilage processes of high-risk fruits. 2×3½=7

SECTION—D

8. (a) Describe quantitative methods for microbial enumeration in the dairy products.

   (b) What do you know about Rapid methods and automation applicable in food industries ? $2\times3\frac{1}{2}=7$

9. (a) Explain the mechanism of the nucleic acid probe and immunoassay for detecting food pathogens.

   (b) Which qualitative methods are helpful in the detection of microbes in food ? $2\times3\frac{1}{2}=7$