b) Moisture of food on growth of microorganism.

c) Temperature of storage on growth of microorganism.

d) Metabolically injured organism.

e) Direct microscopic count.

BACHELOR OF ENGINEERING IN FOOD TECHNOLOGY AND BIOCHEMICAL ENGINEERING EXAMINATION, 2013

(2nd Year, 2nd Semester)

MICROBIOLOGY - II

Time : Three hours Full Marks : 100

(50 marks for each Part)

Use a separate Answer-Script for each Part

PART - I

Answer any ***three*** questions.

All questions carry equal marks.

1. Define ‘Systamics’ and ‘Taxonomy’ of bacteria. Discuss the major characteristics of the microorganisms to be determined adequately for identification and classification of bacteria. 2+2+12

2. What is meant by food poisoning ? Name four microorganisms responsible for food poisoning. How sanitation and hygiene can be maintained in a food processing plant. 2+2+12

3. i) What is meant by food spoilage ? What are the causes of food spoilage ? Name the microorganisms (two for each category) responsible for spoilage of 2+2+3+4+5

   a) Meat and meat products

   b) Cereals c) Bread

ii) What are the different methods of food preservation ?

iii) Write down the practical rules for sanitation and hygiene.

4. a) Define 'fermented food' giving two examples.

b) Outline the preparation of dried fish and tempe indicating the microorganisms involued and the region of consumption.

c) Idli is known as therapeutic food – why ? 3+5+5+3

5. Write short notes on : 2×8

a) Mutation

b) Botulism

PART - II

Answer ***question no.6*** and any ***two*** from the rest.

6. a) Differentiate between :

i) Intrinsic and Extrinsic parameters

ii) Halophilic and Xerophilic organisms

iii) Psychrophilic and thermophilic organisms

iv) Halophilic and Osmophilic organisms.

b) Explain one method of determination of total viable cells in a sample.

c) What are the causes of spoilage of food ? Classify foods on ease of spoilage.

d) Define : antagonism, symbiosis, synergism. 6+5+4+3

7. a) How does biological structure of food protect it from spoilage.

b) What are the chemical changes caused by micro organisms in food.

c) Explain antimicrobial constituents of food. 3+10+3

8. a) Explain associative growth of microorganisms.

b) Explain microbial examination of food by dye reduction technique.

c) What do you mean by 'Indicator organisms' ? Give two examples of it what are coliform organisms ?

d) How could you detect presence of Enterococci in a water sample. Give two examples of Enterococci.

$3\frac{1}{2}+3\frac{1}{2}+4\frac{1}{2}+4\frac{1}{2}$

9. a) What are the sources of air pollution ?

b) Bacterial content in air depends on location – Explain.

c) How could one proceed for bacteriological examination of air.

d) Explain presumptive coliform test. $4+4+3\frac{1}{2}+4\frac{1}{2}$

10. Write short note (***any four***) : 4×4

a) Oxidation-reduction potential of food on growth of microorganism.