53 (FPT 404) FDMB

2019

FOOD MICROBIOLOGY

Paper : FPT 404

Full Marks : 100

Time : Three hours

The figures in the margin indicate full marks for the questions.

Answer ***any five*** *out of the* ***six*** *questions.*

1. *(a)* Elaborate on the characteristics, pathogenesis, symptoms and remedies of the following foodborne pathogens. 5+5

   (i) Salmonella *(ii)* Hepatitis B.

   (b) Describe different types of bacteria based on their ability to survive and/or growth in presence and/or in absence of oxygen. 6

   (c) What is a foodborne outbreak? What are its symptoms? Explain with example. 1+3

Contd.

2. *(a)* Elaborate on ***any two*** of the following biochemical pathways : 8+8

(i) Embden Meyerhof Parnas (EMP)

(ii) Homolactic fermentation

(iii) Heterolactic fermentation.

(b) What are probiotic bacteria ? Give an example. What are the major fermentation microorganisms in soy sauce ? 2+2

3. *(a)* Describe the structure of bacterial flagella with a schematic diagram. 10

(b) Describe different growth phases of a bacteria with the help of a simple growth curve. 10

4. *(a)* Describe the fermentation profile of the following fermented foods : 5+5

(i) Sauerkraut *(ii)* Yoghurt

(b) Draw a simple schematic diagram to demonstrate magnification achieved by a compound light microscope. 8

(c) What is botulism ? What are the toxins involved in foodborne botulism ? 2

5. *(a)* Describe different classifications of fungi with examples. 12

(b) Describe *any two* of the following with examples for each : 3×2

(i) Intoxication

(ii) Infection

(iii) Toxicoinfection.

(c) Name a lactic acid bacteria that can produce diacetyl in fermented dairy products. Give an example of such fermented dairy product. 1+1

6. *(a)* Elaborate on a generalized process flow diagram of sausage processing. What are the significance of lactic acid bacteria (LAB) and surface molds in sausage fermentation ? 8+4

(b) What is 'cheddaring' ? What is the propionic acid fermenter in Swiss Cheese ? 2+1

(c) On the basis of optimum growth temperature (OGT), what are the different types of bacteria ? Discuss with examples for each of the types. 5

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