Total number of printed pages–5

53 (FPT 404) FOMC

2017

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** questions.*

1. *(i)* What is Food Microbiology? Why microbes are important in foods? 1+4

(ii) Choose the correct answers : 1×5

(a) Yeast is *an eukaryotic/a prokaryotic* microorganism.

(b) Indicator microorganism of milk pasteurization is *Mycobacterium tuberculosis / Coxiella burnetii.*

Contd.

(c) *Nisin/Pediocin* is the first bacteriocin discovered from lactic acid bacteria.

(d) *Lysosome/mesosome* is known as suicidal bag.

(e) Gram negative bacteria has *thicker/thinner* cell wall than gram positive bacteria.

(iii) What is Fermentation? What are the different types of fermentation processes? Name the microbes involved in each one of the fermentation process and give example of foods for all. 2+4+4

2. (i) Explain the glycolytic pathway of glucose with proper flowchart. 10

(ii) Discuss the Kreb cycle in prokaryotic microorganism in detail. 10

3. (i) What are the advantages of a fermentation process? 5

(ii) Explain what are top fermenting and bottom fermenting yeasts with proper examples. 4

(iii) Define genetically modified foods. Write about different advantages of genetically modified foods. 1+4

(iv) Explain the oxidative phosphorylation with suitable diagram. 6

4. (i) Write a short note on lactic acid bacteria. 5

(ii) Define the following : 1×6

(a) D-value

(b) Z-value

(c) Sterilization

(d) F-value

(e) TDT

(f) Flaming.

(iii) What are the physical methods of sterilization? 6

(iv) Write *three* differences between gram positive and gram negative bacteria. 3

5. (i) What do you mean by Food Spoilage? Define infection, intoxication and toxicoinfection. 1+3

(ii) Write short notes on : ***(any two)*** 5×2

(a) Botulism

(b) Shigellosis

(c) Salmonellosis

(d) Clostridium perfringens gastroenteritis.

(iii) Write about the microbial spoilage of milk and their products. 6

6. (i) Write the full forms of : 1×5

(a) EMP pathway

(b) ATP

(c) GMO

(d) TCA cycle

(e) LAB.

(ii) Discuss the food borne illnesses caused by parasite. 10

(iii) Fill in the blanks : 1×5

(a) Oxygen is the final acceptor of electron pair in _____ .

(b) Fatty acids are oxidized in _____ pathway.

(c) _____ is the substrate molecule of citric acid cycle.

(d) _____ is known as power house of a cell.

(e) Breakdown of glucose produces 2 molecules of _____ at the end of glycolysis.

7. (i) Write short notes on : ***(any three)*** 5×3=15

(a) Giardiasis

(b) Toxoplasmosis

(c) Taeniasis

(d) Sancocystosis.

(ii) What are Mycotoxins ? Explain different types of mycotoxins. 1+4