Total No. of printed pages = 5

FPT-501/ITFMB&B/5th Sem/2017/N

INTRODUCTION TO FOOD MICROBIOLOGY, BIOCHEMISTRY AND BIOTECHNOLOGY

Full Marks – 70

Time – Three hours

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

PART – A

All questions carry 1 mark each. 1×25=25

1. Rod shaped bacteria are known as ———.

2. ——— medium is designed to suppress the growth of some microorganisms while allowing the growth of others.

3. Media lacking a solidifying matrix is known as ———.

4. The stage when no bacterial growth occurs is called the ———.

5. Penicillin is produced by the fungus ———.

[Turn over

6. The substance on which the enzymes act is termed as ———.

7. ——— is the synthesis of all compounds needed by cells.

8. ——— is the fastest of all enzymes.

9. The bacteria which grow at temperature above 45°C to 90°C are called ———.

10. The cell walls of bacteria can be lysed by the enzyme ———.

11. ——— is the removal of ice or other frozen solvents from a material through the process of sublimation and the removal of bound water molecules through the process of desorption.

12. Spreading the viable cells on the surface of a solid medium is ———.

13. A medium of which exact chemical composition is not known is referred to as ———.

14. At what temperature agar melts ?

15. An enzyme is made up of proteins only is known as ———.

16. Give an example of absolute specificity.

17. The two main temperatures used for sterilization via autoclave are ——— and 132°C.

18. The process of conversion of sugar into ethyl alcohol and carbon-dioxide under anaerobic condition is called ———.

19. What is SCP ?

20. Write an important function of flagella.

21. Give an example of inorganic Co-factor.

22. How ATP is different from ADP ?

23. Why can Pleomorphic bacteria provide much shape ?

24. Give an important application of amylase used in food processing industries.

25. All enzymes are proteins but all proteins are not ———.

PART – B

Answer any *five* questions.

26. (a) Define Generation time. In which phase the increase in cell number ceases and why ? 3

(b) Explain in brief the conjugation mode of reproduction in bacteria. 4

(c) What is immobilized enzymes ? Give one application of immobilized enzymes. 2

27. (a) Draw and label the flow chart for the production of enzymes by microorganisms. 4

(b) Distinguish between pour plate and spread plate. 3

(c) What is enriched media ? Why do we have to use autoclave for the tubes medium ? 2

28. (a) What are the important criteria for selection of microbial strain in SCP process ? 3

(b) "The rate of cell growth matches the rate of cell death in stationary phase". Explain. 3

(c) Explain the ES complex. 3

29. (a) Discuss the different events that take place in the formation of pyruvic acid from glucose. 4

(b) Define biocatalyst. Write the differences between active site and allosteric site. 3

(c) What is micro-organisms ? Give two important characteristics of prokaryotic cell. 2

30. (a) Explain in brief the process of ethanol production from sugar. 4

(b) What is Pure Culture Isolation ? 2

(c) Draw and label the ultrastructure of bacterial cell. 3

31. (a) Differentiate between Gram positive and Gram negative bacteria. 3

(b) Write the important characteristics of colony morphology. 3

(c) Explain in brief the microbial production process of enzymes. 3

32. Write short notes on any *three* : 3×3=9

(a) Competitive inhibition

(b) Serial dilution

(c) Solid medium

(d) Biomass.