

Total No. of printed pages = 5

FPT-501/IFMB&B/5th Sem/2018/M

**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. $1 \times 25 = 25$

1. _____ medium is media lacking a solidifying matrix.
2. Penicillin is produced by the fungus _____.
3. _____ is the most common fungi in the world.
4. The breakdown of molecules to obtain energy is called _____.
5. For effective sterilization in an autoclave the temperature obtained is _____.
6. Temperature required for pasteurization is _____.

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7. The solidifying agent commonly used in preparation media is _____.
8. The protein component without co-factor is termed as _____.
9. The substance on which the enzyme acts is termed as _____.
10. Enzymes are most active at a temperature of around _____.
11. The process of conversion of sugar into ethyl alcohol and CO_2 under anaerobic condition is generally called _____.
12. A _____ is the micro-organisms that grow in a culture medium.
13. MacConkey agar is an example of _____.
14. The phase where bacterial growth occurs is called _____.
15. Spiral shaped bacteria are called _____.
16. Bacteria which grow at temperature between 10°C - 47°C are called _____.
17. _____ is a process used for preserving biological material by removing the water from the sample, which involves first freezing the sample and then drying it, under a vacuum at very low temperatures.

18. During the — phase, the number of viable cells decreases geometrically (exponentially), essentially the reverse of growth during the log phase.
19. The pH at which an enzyme is most efficient is called the — pH of an enzyme.
20. The part of the enzyme where the substrate binds is called the —.
21. What is SCP ?
22. In which phase the increase in cell number ceases ?
23. Give one application of Lyophilization.
24. What sort of fermenter does it require in antibiotic production ?
25. Give one example of flavor compound.

PART - B

Answer any *five* questions.

1. (a) What is immobilized enzymes ? Write its advantages. 3
- (b) Write the important characteristics of colony morphology. 4
- (c) What is serial dilution ? 2

7. 2. (a) Draw and label the diagram of fermenter for penicillin production. 3

8. (b) What is disinfection ? Give suitable examples. 3

9. (c) What is co-factor ? Explain the ES complex. 3

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

(b) Explain giving reasons why preserving a culture is important. 2

(c) What is streak plate ? What is the purpose of pure culture isolation ? 3

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

(b) Draw and label the ultra-structure of a bacteria cell. 3

(c) What is culture medium ? 2

(a) Write brief notes on any *two* : $3 \times 2 = 6$

- (i) Fermented food
- (ii) Enzymes in food industry
- (iii) Prokaryotic cell

(b) Differentiate between Gram positive and Gram negative bacteria. 3

6. (a) Differentiate between any *two* : $3 \times 2 = 6$

- (i) ATP and ADP
- (ii) Selective and differential medium
- (iii) Pour plate and spread plate.

(b) What is enriched medium ? Give examples. 3

7. (a) Explain the standard bacterial growth curve. 4

(b) What is micro-organism ? Give two examples. 3

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