

Total No. of printed pages = 3

FPT-501/FMBB/5th Sem/2017/M

**FOOD MICROBIOLOGY, BIO-CHEMISTRY
AND BIO-TECHNOLOGY**

Full Marks – 70

Pass Marks – 28

Time – Three hours

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

Answer any *five* questions.

1. (a) Define micro-organism. Explain the importance of micro-organism in food industry. 6
- (b) What is chemically defined medium? Give examples. 3
- (c) What are enzymes? Explain the ES complex. 5
2. (a) What is Glycolysis? Discuss the different events that take place in the formation of pyruvic acid from glucose. 6

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- (b) Give some applications of Lyophilization. 3
- (c) Explain the important characteristics of colony morphology. 2
- (d) What is simple staining ? What are the steps to make sterile media ? 3
3. (a) Define the following terms : $2 \times 4 = 8$
- (i) Culture medium
 - (ii) Serial dilution
 - (iii) Endospore
 - (iv) Substrate.
- (b) Draw and label the diagram of fermenter for penicillin production. 3
- (c) Differentiate between spread and pour plate. 3
4. (a) What is prokaryotic cell ? Explain the conjugation mode of reproduction in bacteria. 6
- (b) Write a brief note on production of food flavour. 4
- (c) What is nutrient agar ? Explain in brief how to make a nutrient agar. 4

5. (a) Give three important characteristics of bacterial cell. 3
- (b) Explain in brief the process of ethanol production from sugar. 5
- (c) How selective medium is different from reducing medium ? 3
- (d) What is pure culture isolation ? 3
6. (a) Draw and label the ultra-structure of a bacterial cell. 4
- (b) What is exponential phase ? Explain why microbes cannot grow in stationary phase ? 4
- (c) Define metabolism. Write a brief note on protein metabolism. 4
- (d) What is enrichment culture ? 2
7. (a) Explain the role of enzymes in food industry. 6
- (b) Classify bacteria according to their form. 4
- (c) What is fermented food ? Give examples. 4