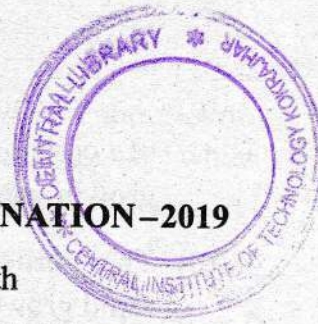


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END SEMESTER EXAMINATION-2019

Semester – 5th

Subject Code : FPT-501

**INTRODUCTION TO FOOD
MICROBIOLOGY, BIOCHEMISTRY AND
BIOTECHNOLOGY**

Full Marks – 70

Time – Three hours

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

Instructions :

1. *All* questions of PART-A are compulsory.
2. Answer any *five* questions from PART-B.

PART – A

Marks – 25

1. Fill in the blanks : 1×10=10

- (a) _____ medium is media lacking a solidifying matrix.
- (b) A bacterium that occurs as pairs of cocci are called _____.

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- (c) _____ contain agents that inhibit the growth of certain bacteria while permitting the growth of other.
- (d) The portion of the growth curve where a rapid growth of bacteria is observed is known as _____.
- (e) Enzymes can be precipitated by using _____.
- (f) A medium whose exact chemical composition is known is referred to as _____.
- (g) Scientific name of bread mold fungus is _____.
- (h) _____ is an enzyme complex that catalyzes the fermentation of sugar into ethanol and carbon-dioxide.
- (i) Lipid content in gram positive bacterial cell varies from _____.
- (j) A culture is the _____ that grow in a culture medium.

2. Write true or false :

1×10=10

- (a) All microorganisms can grow in any given culture medium.
- (b) SCP is an edible unicellular microorganisms.

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(2)



- (c) Differential media acts to inhibit the growth of certain kinds of microorganisms while allowing the growth of other.
- (d) For spread plate, colony grows only on the surface of the medium.
- (e) Endospore formation is not a method of reproduction.
- (f) The substance on which the enzyme acts is termed as substrate.
- (g) The stage where no bacterial growth occurs is called decline phase.
- (h) Yeast belongs to a class of unicellular fungi.
- (i) Cell wall is thick in Gram negative bacteria.
- (j) Flagella help in transfer of DNA from donor to recipient cell.

Choose the correct answer :

1×5=5

- (a) Non-protein organic part of the enzyme is
- (i) Co-factor (ii) Co-enzyme
- (iii) Apo-enzyme (iv) Iso-enzyme
- (b) The cocci which mostly occur in single or pairs are
- (i) Diplococci (ii) Sarcinae
- (iii) Streptococci (iv) None of these

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- (c) Solid medium is usually used as
- (i) Slants
 - (ii) Stabs
 - (iii) Petridishes
 - (iv) All of the above
- (d) Which of the following is not a product of fermentation ?
- (i) Oxygen
 - (ii) CO₂
 - (iii) Lactate
 - (iv) Ethanol
- (e) The cell walls of many gram positive bacteria can be easily destroyed by the enzyme known as
- (i) lipase
 - (ii) lysozyme
 - (iii) pectinase
 - (iv) peroxidase.

PART-B

Marks - 45

4. (a) What is micro-organism ? Give two examples of beneficial micro-organisms. 3
- (b) Explain in brief the process of ethanol production from sugar. 4
- (c) What is the application of an autoclave ? 2
5. (a) Define generation time. In which phase the increase in cell number ceases and why ? 3

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(4)

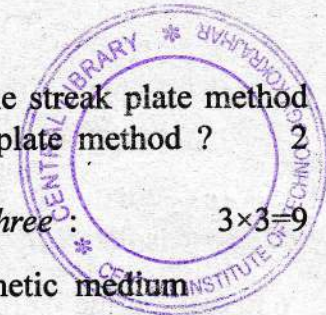
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- (b) Explain the process of conjugation in bacteria. 4
- (c) What is the purpose of pure culture isolation ? 2
6. (a) Define enriched media giving suitable examples. 3
- (b) Draw and label the flow chart for the production of enzymes by microorganisms. 4
- (c) Give some important applications of lyophilization. 2
7. (a) What is colony ? Write the important characteristics of colony morphology. 3
- (b) Discuss the different events that take place in the formation of pyruvic acid from glucose. 4
- (c) Give an important application of amylase and cellulase used in food processing industries. 2
8. (a) What are enzymes ? Explain the ES complex. 3
- (b) What sort of fermenter does it require in antibiotic production ? Draw the diagram of fermenter for penicillin production. 4

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(5)

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- (c) What advantages do the streak plate method have over the spread plate method ? 2
9. Distinguish between any *three* : 3×3=9
- (a) Synthetic vs Non-synthetic medium
 - (b) Gram positive vs Gram negative bacteria
 - (c) Differential vs Reducing medium
 - (d) Pour plate vs Spread plate
 - (e) Active vs Allosteric site.
10. (a) What is an inoculation and what is its purpose ? 3
- (b) What is fermentation ? Give examples of fermented food. 4
- (c) Why do bacteria produce endospores ? 2