

B.Sc. FOOD SCIENCE & TECHNOLOGY
First Semester
GENERAL MICROBIOLOGY
(BFST - 102)

Duration: 3Hrs.

Full Marks: 70

Part-A (Objective) =20
Part-B (Descriptive) =50

(PART-B: Descriptive)

Duration: 2 hrs. 40 mins.

Marks: 50

Answer any four from *Question no. 2 to 7*
Question no. 1 is compulsory.

1. a) Define transduction. Describe generalized transduction in bacteria with a neat diagram. (1+4=5)
b) Define Competent cell. Draw the diagram and explain the mechanism of transformation in bacteria. (1+4=5)
2. Write down the basic properties of fungi. Explain the reproductive cycle in Zygomycota (3+2+5=10)
3. Who discovered the theory of pure culture? Write down Koch postulates? Describe any one method to isolate a pure culture. (2+3+5=10)
4. Explain the ED pathway and its relation with glycolytic pathway. Refer the energy yield in both pathway. (5+5=10)
5. Who discovered Gram staining? Write down the principle of Gram staining? Explain the structure of G-ve bacteria with a neat diagram. (2+3+5=10)
6. Write down the stages of bacterial growth curve? Derive the derivation of bacterial growth curve. (2+8=10)
7. Define media. What do you mean by batch culture and continuous culture? Describe with a neat diagram the procedure of continuous culture with eg. (2+3+5=10)

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Duration: 20 minutes

Marks – 20

(PART A - Objective Type)

I. Choose the correct answer:

1×10=10

1. NAM and NAM is bonded by
 - a) Pentaglycin cross bridge
 - b) α 1,4 glycosidic bond
 - c) β 1,4 glycosidic bond
 - d) β 1,2 glycosidic bond
2. Teichoic & lipoteichoic acid is present in
 - a) G +ve bacteria
 - b) Gram –ve bacteria
 - c) Plasma membrane
 - d) Capsule
3. *Salmonella typhi* is associated with
 - a) Monotrichous flagella
 - b) Lophotrichous
 - c) Peritrichous
 - d) Amphitrichous
4. Hopanoids are present in
 - a) Gram +ve cell wall
 - b) Plasma membrane
 - c) Capsule
 - d) Gram –ve cell wall
5. Mushroom is an eg of:
 - a) Deuteromycetes
 - b) Basidiomycetes
 - c) Ascomycetes
 - d) Zygomycetes
6. Tobacco mosaic virus is an eg of
 - a) Icosahedral capsid
 - b) Helical capsid
 - c) Complex symmetry
 - d) Enveloped
7. The ability of a plasmid to integrate with the bacterial chromosome or remain independent is known as
 - a) Phagemid
 - b) Cosmid
 - c) Episome
 - d) Transposon
8. The temperature of moist heat sterilization is
 - a) 100°C
 - b) 121°C
 - c) 170°C
 - d) 110°C
9. The third amino acid bonded with NAM is
 - a) L Alanine
 - b) L- lysine
 - c) D-Alanine
 - d) D- glutamine

10. Chemostat is an eg of:

- a) Batch culture
- b) Serial dilution
- c) Continuous culture
- d) Open culture

II. Fill in the blanks:

1×10=10

- a) The third amino acid attached with every NAM is.....
- b) The relationship between bacterial growth constant and generation time is
.....
- c) The high content lipid present in Mycobacterium sps is known.....
- d) The primary stage of the bacterial growth is termed as.....
- e) Rhizopus stolonifer belongs to.....family of fungi.
- f) Full form of VAM is.....
- g) Agar is isolated from a type of algae known as.....
- h)plasmid is known as tumour inducing plasmid present in
.....bacteria.
- i) The components of lipopolysaccharide are.....,
.....&.....
- j) The key component produced in Entner duodorhoff pathway is.....
