



Name : .....

Roll No. : .....

Invigilator's Signature : .....

**CS/B.Tech (FT)/SEM-6/FT-602/2010**

**2010**

**ADVANCED FOOD MICROBIOLOGY AND  
BIOTECHNOLOGY**

Time Allotted : 3 Hours

Full Marks : 70

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words  
as far as practicable.*

**GROUP – A**

**( Multiple Choice Type Questions )**

1. Choose the correct alternatives for any *ten* of the following :

10 × 1 = 10

i) Rappaport -Vassiliadis broth is used for isolation of

- a) *Escherichia coli*
- b) *Salmonella typhi*
- c) *Clostridium botulinum*
- d) *Staphylococcus aureus*.

ii) Nicin is

- a) secondary metabolite
- b) used as bio-preservative
- c) produced by lactic acid bacteria
- d) all of these.



- iii) "Bt Brinjal" : the term BT comes from
- a) *Bacillus stereothermophilus*
  - b) *Bacillus thermophilus*
  - c) *Bacillus thurangensis*
  - d) none of these.
- iv) Test organism for Pasteurization is
- a) *Coxiella burnetii*
  - b) *Clostridium botulinum*
  - c) *Clostridium perfringens*
  - d) *Staphylococcus aureus*.
- v) *Erwinia carotovora* is present in
- a) fish
  - b) meat
  - c) milk
  - d) vegetables.
- vi) Rapid method for the detection of specific organisms is
- a) dye reduction test
  - b) MPN counts
  - c) both of these
  - d) none of these.
- vii) Example of a bacterium which is not of Coliform group is
- a) *Salmonella*
  - b) *Enterobacter*
  - c) *Aeromonas*
  - d) none of these.
- viii) Patulin is a toxin produced by
- a) *Clostridium*
  - b) *Staphylococcus*
  - c) both of these
  - d) none of these.
- ix) The circular double stranded DNA is called
- a) Chromosomal DNA
  - b) Z DNA
  - c) Plasmid DNA
  - d) none of these.



- x) The 'Replication Fork' is formed during
- a) Initiation phase
  - b) Elongation phase
  - c) Termination phase
  - d) All of these.
- xi) Transformation is easiest by
- a) Plasmids
  - b) DNA fragments
  - c) RNA fragments
  - d) all of these.
- xii) Acridine orange binds with
- a) DNA
  - b) RNA
  - c) Both of these
  - d) none of these.

**GROUP – B**  
**( Short Answer Type Questions )**

Answer any *three* of the following.       $3 \times 5 = 15$

2. Briefly discuss on isolation and identification of *Escherichia coli* from a food sample.
3. Discuss about the advantages and disadvantages of genetically modified food.
4. What characteristic should be possessed by an organism to be selected for a fermentation process ?
5. Briefly explain ELISA test.
6. Write down any one industrial method of the production of Vinegar.



**GROUP – C**

**( Long Answer Type Questions )**

Answer any *three* of the following.

3 × 15 = 45

7. How can you detect pathogenic micro-organism present in a food sample applying genetical method ? Briefly discuss on micro-organism preservation techniques. What are the function of hop in beer production ? What are the basic differences between solid state fermentation and submerged fermentation ? Give example of consumable and poisonous mushrooms.  $3 + 4 + 3 + 3 + 2$
8. Briefly discuss on DNA replication process. What is plasmid ? What is its application ? What is mutation ? Give examples of physical and chemical mutagens. Briefly discuss on mode of action of one chemical mutagen.  $5 + 1 + 2 + 1 + 3 + 3$
9. What are the advantages and disadvantages of mushrooms as a food ? Describe about the procedure of mushroom production. Briefly discuss its requirements, composition and preparation of compost and conditions.  $( 2 + 2 ) + 11$
10. What do you mean by mutagen ? Name some mutagens. Describe briefly about bacterial transformation.  $1 + 3 + 11$
11. Write short notes on any *three* of the following :  $3 \times 5$
- a) Effect of irradiation on Microbial growth
  - b) Transduction
  - c) Production of fats
  - d) SCP.

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