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 thurangenasic*

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 × 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 × 5

    a) Effect of irradiation on Microbial growth

    b) Transduction

    c) Production of fats

    d) SCP.