



Name :

Roll No. :

Invigilator's Signature :

CS/B.TECH(FT)/SEM-6/FT-602/2012

2012

**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.

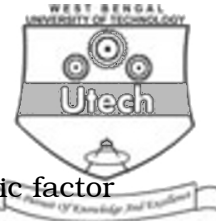
GROUP – A

(Multiple Choice Type Questions)

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

10 × 1 = 10

- i) Cider vinegar is produced from
 - a) malt
 - b) alcohol
 - c) apple
 - d) none of these.
- ii) The disadvantage of algae for consumption is
 - a) its large size
 - b) its undigestible cell wall
 - c) its high content of nucleic acid
 - d) none of these.



- iii) Water activity is an
- a) intrinsic factor b) extrinsic factor
- c) implicit factor d) none of these.
- iv) Example of an anaerobic spore former is
- a) *Bacillus subtilis* b) *Campylobacter jejuni*
- c) *Escherichia coli* d) none of these.
- v) Rapid method for the detection of specific organisms are
- a) Dye reduction test b) MPN counts
- c) both of these d) none of these.
- vi) Acridine orange binds with
- a) DNA b) RNA
- c) both of these d) none of these.
- vii) Example of a bacteria 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) Citrinin is a toxin obtained from
- a) *Aspergillus* b) *Penicillium*
- c) Both of these d) none of these.
- x) *E. coli* is used as an index or indicator of fecal pollution since
- a) They are the most responsible bacteria among other members of Coliform to produce disease
- b) They can be recovered with less difficulty
- c) Both of the above
- d) None of these.



GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following. $3 \times 15 = 45$

9. Briefly describe the bacterial transformation process. Justify that DNA replication process is semi-conservative. Give example of two physical and chemical mutagens and their mode of action. $6 + 4 + 5$
10. How can you preserve consumable mushroom ? Give two processes. How can you produce SCP as a byproduct of an industrial process ? $8 + 7$
11. What is role of water activity in microbial growth ? Anaerobic bacteria cannot tolerate presence of oxygen. Why ? Do you think fermented foods are always safe and nutritious ? $5 + 4 + 6$
12. Prepare two different fermented products from milk. Mention the name of the organisms involved in the processes. Describe Orlean's process for vinegar production. $8 + 7$
13. Briefly describe the double stranded DNA structure. Illustrate the DNA replication process. Give advantages and disadvantages of genetically modified food. $5 + 5 + 5$
14. What do you mean by DFT method ? What is the basic principle of this method ? Briefly describe the ELISA method. Write the physiological and biochemical characteristics of *Clostridium botulinum*. Give the isolation and identification of Salmonella in food sample. $3 + 5 + 2 + 5$

