

CS/B.Sc.(H)/Micro-Bio./SEM-6/FAM-603/2013

2013

**FOOD & AGRICULTURAL
MICROBIOLOGY**

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 :

10x1 = 10

i) Particle above 2.0 mm are known as

- a) Gravel
- b) Sand
- c) Silt
- d) Clay.

ii) Which one is found in milk ?

- a) *Salmonella*
- b) *Bacillus*
- c) *S. cremoris*
- d) None of these.

iii) Ropiness can be caused by

- a) *Alkali genes*
- b) *Lactobacillus*
- c) *Bacillus*
- d) none of these.

iv) The actinomycetes isolated from which zone of soil ?

- a) A Horizon
 - b) B Horizon
 - c) C Horizon
 - d) None of these.
- v) *Clostridium perfringens* causes
- a) gas gangrene
 - b) stormy fermentation
 - c) both (a) & (b)
 - d) ropiness.
- vi) Aflatoxin is produced by
- a) *A. flavus*
 - b) *A. niger*
 - c) *A. parasiticus*
 - d) all *Aspergillus* sp.
- vii) *Penicillium* produces a toxin is called
- a) aflatoxin
 - b) ochratoxin
 - c) cyclopiazonic acid
 - d) patulin.
- viii) Nitrogenase is functional in which of the following compartments of cyanobacteria ?
- a) Heterocyst
 - b) Vegetative cells
 - c) Nodule
 - d) None of these.
- ix) The reaction catalyzed by ammonium mono-oxygenase on ammonium is called
- a) Nitrosification

- b) Nitrification
 - c) Ammonification
 - d) None of these.
- x) Botulinum toxin is a type of
- a) AB type
 - b) neurotoxin
 - c) both of these
 - d) none of these.
- xi) Cholera toxin is a type of
- a) enterotoxin
 - b) endotoxin
 - c) neurotoxin
 - d) hormone.
- xii) Mycotoxin patulin is produced by
- a) *Penicillium expansum*
 - b) *Alternaria*
 - c) *Fusarium*
 - d) None of these.
- xiii) Transmethylation is a phenomenon observed in
- a) soil anaerobic methanogens
 - b) nitrifying bacteria
 - c) diazotrophs
 - d) symbiotic bacteria.
- xiv) Due to microbial growth, redox potential in the food is
- a) reduced
 - b) increased
 - c) not effected
 - d) remained constant.

- xv) Putrefaction occurs in case of those foods which are rich in
- a) protein
 - b) carbohydrate
 - c) fatty acids
 - d) all of these.

GROUP – B

(Short Answer Type Questions)

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

2. What is food spoilage ? What are the causes of food spoilage ? 2 + 3
3. What is milk ? Write down the procedure of cheese production. 1 + 4
4. What are pasteurization and apperization ?
5. What are the significances of entomopathogenic fungi ?
6. Discuss phosphate solubilizing bacteria as their role in plant growth promotion.
7. Explain Winogradsky column schematically.
8. What are the advantages and disadvantages of microbial pesticide ?

GROUP – C

(Long Answer Type Questions)

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

9. What is blight ? Explain leaf blight (early & late) of potato with well labelled diagram. Write down the symptoms of viral diseases. 2 + 8 + 5
10. What is biofertilizer ? Write down the procedure for mass production of biofertilizer. Write about different types of

biofertilizer with examples. 2 + 7 + 6

11. Write short notes on any *three* of the following : 3 5

i) Neutralism

ii) Competition

iii) Red rot of sugarcane

iv) Rhizosphere & phyllosphere

v) Viral disease of rice.

12. What are the differences between endotoxin & exotoxin ?

How cholera disease is caused ? Write about salmonellosis.

Name the causative agent. Why are the sweets less prone to

microbial contamination ? 5 + 3 + 1 + 4 + 2

13. What are the advantages & disadvantages of using microbial

pesticides ? Write short notes on denitrification with suitable

example. Name one phosphate solubilising & methanogenic

bacteria commonly found in paddy field. How could you

prevent the canned food spoilage ? Name one microbe cause

the canned food spoilage. 6 + 3 + 2 + 3 + 1

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