2016

M.Sc.

3rd Semester Examination

MICROBIOLOGY

PAPER—MCB-303

Full Marks : 40

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

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

Illustrate the answers wherever necessary.

Separate answer scripts to be used for each groups.

Group — A

[*Marks : 20*]

Answer any *two* questions.

1. (a) Brierly describe the process of ammonification and nitrification. In each step of the process, write the name of the microorganism and the enzyme involved for such transformation.

(b) Compare assimilatory No_3 reduction with Dissimilatory No_3 reduction.

(c) What is VAM ? Mention Its utility.

4+3+(1+2)

2. (a) How will you produce and use BGA for cultivation of Rice ? State its limitations.

(b) Name two carrier materials that are used in the preparation of Rhizrbial inoculant and mention their water holding capacity and organic matter content.

(c) Briefly mention the molecular mechanism of killing of Pest by *Bacillus thuringiensis* with special reference to Cry gene.

4+2+4

3. Write notes on any *four* of the following : $4 \times 2\frac{1}{2}$

(a) Micropropagation ;

(b) Liquid biofertiliser ;

(c) Sulfur Cycle ;

(d) Composting ;

(e) Advantages of Vermicompost ;

(f) Differentiate between cybrid and embryo culture.

Group — B

[*Marks : 20*]

Answer any *two* questions.

4. (a) Briefly mention the antimicrobial factors that produced by Lactic acid bacteria with special retenence to Bacteriocin.

(b) What is starter culture and state its significance ?

(c) Describe the steps of Sauerkraut fermentation.

5+2+3

5. Write notes : $4 \times 2\frac{1}{2}$

(a) HACCP ;

(b) SUFU ;

(c) GM foods and their acceptability ;

(d) Spoilage of food ;

6. (a) Briefly descrbie the food borne diseases caused by following micro-organism.

(i) Clostridium ;

(ii) Shigella.

(b) Write beneficial aspects of fermented food.

(c) Write a note on oriental fermented food.

4+2+4

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