

B.Sc.(Ag.) Honours Semester– I Examination, 2014
Course No. : PPC –111 (Agricultural Microbiology)
(New Syllabus)

Signature of Centre Superintendent

Roll No.: (in figure) _____ (in words) _____
Student Index No. _____ Regn. No. _____ of _____

Time : Two hours

Full marks : 40

Questions are of value as indicated in the margin

Part-I

(Objective and Short Answer Type)
(Use only ball point pen)

Time : 20 minutes

Full marks : 10

- Note:** 1. Answer in question paper itself.
2. Striking, rewriting and overwriting are not allowed in the objective type questions.

1. State True (T) or False (F) for the following statements: (any five):

0.5×5=2.5

- a) Stationary phase is found in the growth curve of bacteria. ☐
- b) Viroids do not have protein coat. ☐
- c) Virus consists of nucleic acid and protein. ☐
- d) Mycoplasma is an eukaryotic organism. ☐
- e) The conversion of amino acid to ammonium by soil decomposers is called deamination. ☐
- f) Mushroom is a fruiting body of ascomycetes and basidiomycetes fungus. ☐

2. Fill in the blanks (any two):

1×2=2

- a) _____ is commonly known as 'the Father of Microbiology'.
- b) The term 'contagium Vivum fluidum' was given by _____.
- c) Theory of panspermia regarding the origin of life on earth was first proposed by _____.
- d) Discontinuous heating for sterilization is called _____.

3. Encircle the right answer (any five):

0.5×5=2.5

- a) *Rhizobium* has symbiotic association with
(i) legumes (ii) non-legumes (iii) sugarcane (iv) paddy
- b) The best advantage of plants in mycorrhizal association is
(i) N-fixation (ii) K-absorption (iii) P-absorption (iv) Mn-absorption
- c) Azolla is widely used as nitrogen fixation agent in
(i) paddy field (ii) corn field (c) maize field (d) none of the above
- d) Which of the following is used as biopesticides against insects
(i) *Beauveria bassiana* (ii) *Fusarium oxysporum* (iii) *Aspergillus niger*
(iv) *Alternaria trititina*
- e) The nucleic acid of TMV is
(i) ssRNA (ii) dsRNA (iii) ssDNA (iv) dsDNA

4. Write briefly on *any three*:

1×3=3

(i) Vermicompost

(ii) Episomes

(iii) Prions

(iv) Koch's postulates

(v) Sir Alexander Fleming

(vi) Rhizomorph

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Part–II

(Descriptive Type)

Time : 100 Minutes

Full marks : 30

Questions are of value as indicated in the margin.

Answer **any four** questions from the following.

5. Discuss briefly about different theories on the origin of life on Earth. 7.5
6. (a) Explain the spitzenkorper theory of hyphal tip growth with the help of mathematical model.
(b) Explain plasmogamy with examples. 4.5+3=7.5
7. (a) Discuss the method of Ascus formation.
(b) Write about the different types of morphs found in fungi. 4.5+3=7.5
8. Define bacteria. Draw a neat labelled diagram of a typical bacterial cell. Write briefly about bacterial recombination. 1+2+4.5=7.5
9. Differentiate between (**any three**) 2.5×3=7.5
(a) Sympodial and Verticillate type of branching
(b) Hyphopodia and appressorium
(c) Cellwall of Gram (+)ve and Gram (–)ve bacteria
(d) Lytic and Lysogenic cycle of bacteriophage
(e) Holdfast and Haustoria with examples
10. Write short notes on (**any three**) 2.5×3=7.5
(a) Microbial transformation of nitrogen in soil
(b) Importance of Agricultural Microbiology
(c) Ecological concepts of soil fungi
(d) Microbial spoilage by bacteria
(e) Louis Pasteur
(f) Morphology of bacteria
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