

**B.Sc.(Ag.) Honours Semester– I Examination, 2014**

**Course No. : PPC –111 (Agricultural Microbiology)**

**(Old Syllabus)**

Signature of Centre Superintendent

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

**Time : Two hours**

**Full marks : 50**

*Questions are of value as indicated in the margin*

**Part-I**

**(Objective and Short Answer Type)**

**(Use only ball point pen)**

**Time : 30 minutes**

**Full marks : 20**

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

**1. Fill up the blanks with most appropriate words (*any five*):**

1×5=5

- (i) \_\_\_\_\_ discovered the microbial world for the first time.
- (ii) The infolding of plasmamembrane is called \_\_\_\_\_.
- (iii) Plasmid integrated within the bacterial chromosome is called \_\_\_\_\_.
- (iv) \_\_\_\_\_ got Nobel Prize for crystallizing Tobacco Mosaic Virus particles.
- (v) Clear zone formed by a bacteriophage is called \_\_\_\_\_.
- (vi) The nature of nucleus in Basidiospore \_\_\_\_\_.
- (vii) Mollicutes belongs to phylum \_\_\_\_\_.

**2. Choose the most appropriate word for the following statements (*any five*):**

1×5=5

- i) How many flagella rings are present in Gram - ve bacterium?  
(a) 3 (b) 4 (c) 2
- ii) Dipicolinic acid is an important constituent of  
(a) Bacterial cell wall (b) Bacterial protoplasm (c) Endospore
- iii) What is the standard autoclaving condition?  
(a) 121.6° c at 15 lb psi for 15 min  
(b) 122° c at 20 lb psi for 20 min  
(c) 120° c at 20 lb psi for 15 min
- iv) Method of sterilization through alternate heating and cooling of a substrate was developed by?  
(a) Louis Pasteur (b) Robert Koch (c) John Tyndall
- v) Infectious naked Nucleic Acid is the typical characteristics of  
(a) Virusoid (b) Virucide (c) Viroid
- vi) The population of bacteria in root zone is known as  
(a) Rhizosphere (b) Phyllosphere (c) Sphingmosphere

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- vii) The mutation rate is highest in  
(a) Bacteria (b) Virurs (c) Fungi

3. Answer in brief *any five* of following questions.

2×5=10

- (a) Two contributions of E.J. Butler

(b) CSA

(c) Endomycorrhiza

(d) Pili

(e) Beneficial role of microbes in milk and milk products

(f) Common preservatives

(g) Bacterial transformation

(h) Spontaneous generation theory

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**Part–II**  
**(Descriptive Type)**

**Time : 1.5 Hours**

**Full marks : 30**

*Questions are of value as indicated in the margin.*

Answer **any four** questions.

4. Draw and describe the structure and life cycle of a complete bacteriophage. 7.5
5. Define balanced growth in bacteria. Draw the growth curve and describe the different stages of a growth curve and factors affecting bacterial growth. 7.5
6. Write important characters of the following (**any three**) 2.5×3=7.5
  - a) Mycoplasma/Phytoplasma
  - b) Blue Green Algae
  - c) Conjugation in bacteria
  - d) Bdellovibrio
  - e) Flagellum-structures & Classification on the basis of attachment
7. Write important characters of the following (**any five**) 1.5×5=7.5
  - a) Zygospore
  - b) Koch's Postulate
  - c) Bacterial plasmid
  - d) Bacterial Endospore
  - e) Biopesticide
  - f) Microbial Spoilage of food
  - g) Scope of Microbiology
8. Write in brief about ascospore production. 7.5
9. What is geochemical cycle? Describe the Phosphorus or nitrogen cycle. 1+6.5=7.5
10. "Without microorganism no living system can exist on the earth" Justify the statement. 7.5

or

"Microbiology is linked with different disciplines of agriculture", Explain.