



Registration No:
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2nd SEMESTER REGULAR EXAMINATIONS, SEPT/OCT 2019-20

AC-122

AGRICULTURAL MICROBIOLOGY

Time : 2 Hours

Maximum : 50 Marks

(Answer **all** questions of Section – A)

SECTION – A

Q.1 Fill in the Blanks with suitable and meaningful word(s): [10×0.5 = 5]

- The most abundant group of microorganism in soil is -----
- The root surface area in contact with mucigel is generally termed as -----
- The bacteria which retain the colour of primary stain even after discolouration with alcohol are -----
- bacteria are of round and spherical shaped.
- Biological nitrogen fixation is related to----- enzyme.
- Bacteria using CO₂ as source of carbon to generate energy from oxidation- reduction of organic compound is -----
- The uptake of applied nutrients by soil microorganisms is called as -----
- Bacteria genus----- can able to decompose organic matter in anaerobic condition
- The term rhizosphere was first used by German scientist- -----
- Blue Green Algae fixes ----- nutrient in soil.

Q.2. Define or Explain the following in one or two sentences [5 × 1 = 5]

- Prokaryotic microbes
- Phosphorus solubilizing bacteria
- VA mycorrhizae
- Azolla
- Labeled cell diagram of Bacteria

Q.3. Match the following [10 × 0.5 = 5]

- | | |
|-----------------------------|--|
| 1 Louis Pasteur | Desulfovibrio |
| 2 Joseph Lister | Amylase |
| 3 Potato spindle tuber | Disproving Spontaneous Generation Theory |
| 4 Nitrifying bacteria | Silkworm mosquito larvae |
| 5 Ectomycorrhizae | Amidases |
| 6 Antonie Von Leeuwen Hock | Viroids |
| 7 C- cycle | Nitrosomonas |
| 8 N- cycle | Microscope |
| 9 Obligate anaerobes | Boletus |
| 10 B thuringiensis Berliner | Antiseptic method of surgery |

Q.4. Write TRUE or FALSE against the following statements [10 × 0.5 = 5]

- Bacteria are classified in animal kingdom due to motile and non photosynthetic character.
- Addition of organic matter with wide C:N causes less available N in soil.
- All gram negative cell wall contains teichoic acid bound to peptidoglycan layer.



- d) Heap method of composting is completely anaerobic in nature.
- e) The inorganic source in soil comprises about 95-98 % of total nitrogen.
- f) Xylan is the main carbohydrate found in hemicelluloses
- g) An introduction to MICROBIOLOGY is written by Alexander Martin.
- h) Carbon bound Sulphur includes amino acids, protein, polypeptides etc.
- i) Desulphovibrio and desulphomataculum are sulphur oxidizing bacteria.
- j) Arbuscular mycorrhiza is another class of ectomycorrhiza.

SECTION – B: (Short Answer Questions)

(Attempt any **five** questions. Each question carries equal marks)

[5 x 6 =30]

- 5) Write significance of C:N ratio of added organic matter in soil. Give example of one each of bacteria and fungus involved in organic matter decomposition
- 6) Describe in brief about nodule formation in legume root.
- 7) Narrate Sulphur cycle in soil with diagram.
- 8) Classify the Biofertilizers and write procedure for seed treatment with it.
- 9) What is rhizosphere? How microbial community of it benefits plant?
- 10) Describe the role of microorganism for preparation of good quality silage.

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