Progressive Education Society's

**Modern College of Arts, Science & Commerce Ganeshkhind, Pune – 16, NEP 2020 (Autonomous)**

**End Semester Examination: OCT / NOV 2024**

***Total No. of Questions**: 4/18* ***Total No. of Pages**: 2*

**SECOND YEAR (BSc Microbiology)**

**COURSE CODE: MIC23102 COURSE NAME: Environmental Microbiology**

**(Semester III)**

**Program: BScGen 03** **Credits:** 2
**Program Specific: SYBSc Microbiology** **Time:** 2 Hours
**Course Type: DSC** Max**. Marks:** 30
**Paper: II** **SET:A**

***Instructions to the candidate:***

1) *All questions are compulsory.*
2) *Figures to the right indicate full marks.*
3) *Draw a well labelled diagram wherever necessary.*

## SECTION: A

**Q1) Answer the following** **[5 X 1= 5M]**

1. How will you determine positive result in MPN test?
2. Define: Ammonification.
3. BGLB stands for_____. (Fill in the blank)
4. Define: Barophilic organisms.
5. Mycorrhizae is association between_____ and _____

a) Bacteria and plant roots b)Plant roots and Algae

c) Fungi and plant roots d) Ants and plant roots.

## SECTION: B

**Q2) Answer <u>any Five</u> of the following questions.** **[5 X 2 =10M]**

1. Explain the terms a) Lagoons b) Activated sludge digestion.
2. Compare: MFT and MPN
3. Justify *Bifidobacterium* as an indicator of fecal pollution.
4. $CO_2 + 4H_2 \rightarrow CH_4 + 2H_2O$, With reference to this reaction, answer the following
   a) Name this reaction.
   b) Name the strict anaerobes which produce $CH_4$
5. Describe Lichens with respect to type of interaction and its association partners.
6. Explain role of carbon in nature and give the importance of mineralization in carbon cycle.
7. Define the term "upwelling" and explain this phenomenon that occurs in oceans.

## SECTION: C

**Q3) Answer <u>any Two</u> of the following questions.** **[2 X 5 = 10M]**

1. Discuss the potential fates of nitrate in soil.
2. Describe the methods used for disinfection of drinking water.
3. State the polyphenol theory of Humus formation.
4. Discuss oxygenic and anoxygenic photosynthesis.

## SECTION: D

**Q4) Answer <u>any One</u> of the following questions.** **[1 X 5 = 5]**

1. Describe the microbiology of composting.
2. Discuss Amensalism and Parasitism with examples.

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