

B.Sc. MICROBIOLOGY
THIRD SEMESTER (SPECIAL REPEAT)
AGRICULTURAL MICROBIOLOGY
BMB-304
[USE OMR SHEET FOR OBJECTIVE PART]

SET
A

Duration: 3 hrs.

Full Marks: 70

Time: 30 mins.

Marks: 20

(Objective)

Choose the correct answer from the following:

1 × 20 = 20

- Microorganism involve in conversion from nitrite to nitrate:
 - Nitrobactor
 - Nitrosomonas
 - Bacillus
 - Pseudomonas
- The free-living fungus Trichoderma can be used for:
 - Producing antibiotics
 - Controlling butterfly caterpillars
 - Biological control of plant diseases
 - Killing insects
- Which of the following is a non-symbiotic biofertiliser?
 - VAM
 - Rhizobium
 - Anabaena
 - Azotobacter
- What does biocontrol refer to?
 - Use of chemical methods for controlling plant diseases
 - Use of biological methods for controlling plant diseases
 - Use of morphological methods by the plants to control the attack of pathogens
 - Use of physical methods by the plants to control the attack of pathogens
- Which of the following is not a biofertilizer?
 - Agrobacterium
 - Mycorrhiza
 - Rhizobium
 - Nostoc
- Pick the correct statement.
 - Legumes fix nitrogen independent of bacteria
 - Legumes do not fix nitrogen
 - Legumes fix nitrogen through bacteria in their roots
 - Legumes fix nitrogen through bacteria in their leaves
- What is the main problem caused by the use of pesticides?
 - They deform the gills of some fishes
 - Their residues persists in water and other components of the environment
 - They kill silkworm
 - Mosquitoes have become resistant to DDT
- Which bacterium is used in gobar gas plant?
 - Nitrifying bacteria
 - Ammonifying bacteria
 - Methanogens
 - Denitrifying bacteria
- Which of the following is not a type of manure?
 - Platinum manure
 - Farmyard manure
 - Compost manure
 - Green manure

10. Which of the following crop has been developed by genetic engineering in India?
 - a. Bt-pomato
 - b. Bt-potato
 - c. Bt-jute
 - d. Bt-cotton
11. In which horizon of soil minerals are found?
 - a. A
 - b. B
 - c. C
 - d. None of these
12. Which physical property of soil is important to us?
 - a. Texture
 - b. Water holding capacity
 - c. Both of these
 - d. None of these
13. The proportion of sand, silt and clay in a soil sample determines:
 - a. Structure
 - b. Nutrient potential
 - c. Fertility level
 - d. Texture
14. Availability of water and minerals in the soil for maximum absorption by roots is in the:
 - a. C-horizon
 - b. A- horizon
 - c. B- horizon
 - d. Surface of soil
15. Upper portion of soil always contains air.
 - a. True
 - b. False
16. Herbivores can easily digest cellulose in their digestive tract because of:
 - a. Microorganisms
 - b. Pancreatic juice
 - c. Liver
 - d. Bile
17. Which of the following is an aromatic polymer of phenols?
 - a. Cutin
 - b. Pectin
 - c. Chitin
 - d. Lignin
18. Most common cellulose fermenter in nature is the member of.....
 - a. Clostridium
 - b. Azotobacter
 - c. Fusarium
 - d. Frankia
19. Humus is.....
 - a. Consists of partially decomposed organic matter
 - b. Also called fat of the land
 - c. Dominant food reservoir
 - d. All of the above
20. Which of the following bacteria cannot fix atmospheric nitrogen?
 - a. Nostoc
 - b. Anabaena
 - c. Lactobacillus
 - d. Rhizobium

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(Descriptive)

Time : 2 hr. 30 mins.

Marks : 50

[Answer question no.1 & any four (4) from the rest]

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| 1. What is soil? Briefly explain the process and factors affecting the soil formation. | 2+4+4=10 |
| 2. What is Humus? How humus is formed? Write the different types of humus. | 2+3+5=10 |
| 3. What is PGPR? Write down the characteristics and mechanism of action of PGPR. Write the role of PGPR in agriculture. | 1+6+3=10 |
| 4. Write short notes on:
a) Silage
b) Advantages, social and environmental aspects of GM crops. | 5+5=10 |
| 5. What is a soil profile? Explain the different horizon with diagram. | 2+8=10 |
| 6. What is Mineralization? Write the Mechanism of cellulose decomposition? Give two examples of cellulose decomposers. | 2+7+1=10 |
| 7. a) What are biocontrol agents? Briefly describe the biocontrol mechanisms.
b) Define plant disease and disease cycle. Explain the economic losses and social impact of plant diseases. | 2+5+3=10 |
| 8. Write notes on:
a) Biofertilizers and its types.
b) Advantages of bioinsecticides over synthetic pesticides. | 5+5=10 |

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