

2019

Part – II

MICROBIOLOGY

(Honours)

Paper – III

(New Syllabus)

Full Marks – 90

Time : 4 Hours

The figures in the right-hand margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Answer any **two** questions :

1. Describe the procedure of isolation and mass production of Rhizobium. Which chemical confirms the existence of Rhizobium in culture media? Which substances are used as carriers of this biofertilizer? How Rhizobium may applied in plants? Mention different methods. 4+3+2+3+3=15
2. a) Draw and describe N–Cycle with reference to different roles of microbes with their examples and reactions. 3+3+4

P.T.O.

- b) State biomagnification with example and its detrimental effect. 3+2
3. a) What is low, medium and high level language? Give examples. 2×3=6
- b) Differentiate compiler and interpreter. 2+2
- c) How to calculate coefficient correlation by using Excel? 3
- d) How you can apply formula in Excel. 2

Group – B

Answer any **five** questions of the following :

8×5=40

4. a) Write the symptoms of Late blight of Potato with causal organisms.
- b) What is their sign and symptom?
- c) What is pathogenesis? (3+1)+2+2
5. Write short notes on any **two** : 4×2=8
- a) Xenobiotics.
- b) Rhizomediation
- c) Microbial degradation of hydrocarbons.
6. a) Describe Trickling Filter method of water purification. 4
- b) Write two water borne disease and their causal organism. How prevent them? 1+2+1

7. a) Describe the role of microbes in nutrient cycling in a pond ecosystem. 5
b) What are the characteristics of waste water? 3
8. Describe the procedure of preparing a phylogenetic tree by Bioinformatic tools. 8
9. a) Describe the nodule formation in legumes.
b) What is the structure of leg hemoglobin?
c) What is alternative nitrogenase? 4+2+2
10. a) What is full form of AM?
b) Why they are treated as biofertilizer?
c) How excess phosphate in soil affect AM?
d) What is their mode of action? 1+2+1+4

Group – C

Answer any **five** questions of the following :

4×5=20

11. Give examples of bacterial parasitism on fungi and fungal parasitism on fungi as biocontrol agent. 2+2
12. Describe the role of microbes in biocomposting. 4
13. a) How much biogas use is cost effective?
b) Write name of two mostly used species of BGA. 2+2

14. a) Write the name of two 'plant parasitic' nematodes.
- b) What is grassy shoot? How it is formed? 2+2
15. a) What is IMViC test? Why it is done? 1+1
- b) What are faecal and non-faecal coliforms? 2
16. a) What is external memory?
- b) What are input devices? Mention. 2+2
17. a) Give name of some databases used for protein blast.
- b) How you can attach file in an e-mail? 2+2
18. a) For determination of the percentage of population of PSM, N-fixer & Fungi in soil, which graph you will prepare?
- b) How smut differs from rust? 2+2
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