2020

BOTANY

[HONOURS]

Paper : II

Full Marks : 75 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.

Answer all the questions.

GROUP–A

(Microbiology)

(Marks : 25)

1. Answer any **three** of the following questions: 1×3=3

   a) What is Archaea?

   b) Give the full forms of AIDS and HIV.

   c) Write one contribution of Antonie von Leeuwenhook.

   d) What is viroid?

   e) What is bacteriod?

2. Answer any **three** of the following questions: 2×3=6

   a) Differentiate between Pili and fimbriae.

   b) Differentiate endospore and exospore.

   c) Write the names of different phases of bacterial growth.

   d) What is Gram-staining? How can you differentiate bacterial cells by Gram-staining?

   e) What is biogenesis and abiogenesis?

3. Answer any **one** of the following questions: 6×1=6

   a) How bacteria reproduce? Describe the process of binary fission. 1+5

   b) Describe the Lysogenic cycle of Lambda Phage.

4. Answer any **one** of the following questions: 10×1=10

   a) Why do bacteria conjugate? What is Hfr strain? Describe the conjugation method with suitable diagram in bacteria. 2+1+7

   b) Do virus reproduce? What is the lytic cycle? What is the lysogenic cycle? Describe the structure of T_4-phage virus with suitable diagram. 1+1+1+7

GROUP-B

(Applied Microbiology Lichens)

(Marks: 20)

5. Answer any **four** of the following: 1×4=4

   a) Name one micro-organism used in commercial bread production.

   b) What is phyllosphere?

   c) Name one micro-organism used in production of griseofulvin.

   d) Define Antibiotics.

   e) Name one micro organism used in commercial production of vinegar.

   f) Name one fungus used as bio-fungicide.

6. Answer any **two** of the following: 2×2=4

   a) Name different types of lichen with examples.

   b) Explain the relationship between the algal and fungal members in lichen.

   c) Define bioremediation with proper examples.

   d) Write economic importance of lichen.

7. Answer any **two** of the following: 6×2=12

   a) Write a short note on bio-film production.

   b) Write the importance of secondary metabolites in bacteria with proper examples.

   c) Discuss the production of cheese with proper diagram.

   d) What is glutamic acid? Name one organism used in glutamic acid production. Discuss the production of glutamic acid. 1+1+4

GROUP–C

(Plant Pathology)

(Marks : 30)

8. Answer any **two** of the following questions: 1×2=2

   a) Differentiate between sign and symptom.

   b) What is the causal organism of Brown spot of rice?

   c) Define inoculum.

   d) What is Koch postulate?

9. Answer any **three** of the following questions: 2×3=6

   a) What is disease epidemiology?

   b) Differentiate between fungicide and fungistat.

   c) Write the types of pathogen toxins.

   d) Write down the symptoms of Late blight of potato.

   e) What is biological control? Give example.

10. Answer any **two** of the following questions: 6×2=12

a) Write the symptoms and control of Bacterial blight of rice. 3+3

b) Briefly discuss the genetics of resistance and susceptibility in plants. 3+3

c) What are phytoalexins? Discuss its role in plant defence. 2+4

d) Discuss the chemical disease management with examples.

11. Answer any **one** of the following questions: 10×1=10

a) What are fungal elicitors? How these elicitors affect host-pathogen interaction? Describe with diagram the host-pathogen interaction. 3+2+5

b) What is the causal organism of Loose smut of wheat? Describe with diagram the disease cycle. Discuss the management of this disease. 2+4+4

———————