

2024

(FYUGP)

(1st Semester)

BOTANY

(Minor)

Paper Code : M-1/BCC-01

(Microbiology and Phycology)

Full Marks : 75

Pass Marks : 40%

Time : 3 hours

(PART : B—DESCRIPTIVE)

(Marks : 50)

**The figures in the margin indicate full marks
for the questions**

UNIT—I

1. (a) Write a note on the evolution of population. 10

Or

- (b) What is speciation? Explain the mechanism of speciation. 2+8=10

UNIT—II

2. (a) Describe the structure of DNA virus (T-phase) with the help of suitable diagram. 10

Or

- (b) Write down the general characteristics of viroid and add at least three diseases caused by viroid in plants. 7+3=10

UNIT—III

3. (a) Write an account of wall less form (mycoplasma and spheroplasts) bacteria. (Mention two examples of spheroplast bacteria. 8+2=10

Or

- (b) Explain the vegetative mode of reproduction in bacteria. Add a note on the economic importance of bacteria. 6+4=10

UNIT—IV

4. (a) Give an account of the classification system of algae according to Fritsch. 10

(3)

Or

(b) Write short notes on the following :

5+5=10

(i) Cell structure and components of algae

(ii) Flagella of algae

UNIT—V

5. (a) Write an account of occurrence and range of thallus organization of *Oedogonium*.

10

Or

(b) Give a detailed account on the reproduction and life cycle of *Polysiphonia*.

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Paper Code : M-1/BCC-01

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(PART : A—OBJECTIVE)

(Marks : 25)

*The figures in the margin indicate full marks for the questions***SECTION—I**

(Marks : 15)

Put a Tick (✓) mark against the correct answer in the brackets provided : $1 \times 15 = 15$

1. When did the theory of evolution become accepted?

- (a) 1950 ()
 (b) 1960 ()
 (c) 1970 ()
 (d) 1980 ()

2. The evolutionary process by which populations evolve to become distinct species is called

(a) adaptation ()

(b) selection ()

(c) speciation ()

(d) modification ()

3. Bacteria which obtain energy from chemical compounds are

(a) chemotrophs ()

(b) phototrophs ()

(c) organotrophs ()

(d) heterotrophs ()

4. A group of viruses which attacks bacteria is

(a) prion ()

(b) viroid ()

(c) bacteriophage ()

(d) retrovirus ()

5. In Latin language, virus means

- (a) agent
- (b) vector
- (c) carrier
- (d) poison

6. The genetic material in virus is wrapped around by a protein coat

- (a) capsid
- (b) capsule
- (c) capsid
- (d) capsid

7. Which of the following bacterial species divides by fragmentation?

- (a) *Bacillus subtilis*
- (b) *Streptococcus faecalis*
- (c) *Rhodopseudomonas acidophila*
- (d) *Nocardia* sp.

8. What is the approximate size of bacterial cell?

- (a) 1 mm in diameter
- (b) 0.5 to 1.0 micrometer in diameter
- (c) 2 mm in diameter
- (d) 2 micrometer in diameter

9. The phenomenon of bacterial transformation was first recorded by

- (a) Avery (1928)
- (b) Griffith (1928)
- (c) MacLeod (1928)
- (d) McCarty (1928)

10. Chlorophyll is found in

- (a) blue-green algae
- (b) green algae
- (c) brown algae
- (d) All of the above

11. Reserve food product in Myxophyceae is

(a) cyanophycean starch ()

(b) myxophycean starch ()

(c) chlorophycean starch ()

(d) phycophycean starch ()

12. Which among the following is a prokaryotic algae?

(a) Brown algae ()

(b) Green algae ()

(c) Blue-green algae ()

(d) Red algae ()

13. The life cycle of polysiphonia is

(a) haplo-diplobiontic ()

(b) diplontic ()

(c) haplontic ()

(d) diphasic ()

14. Unilocular and plurilocular sporangia are found in

(a) Polysiphonia ()

(b) Spirogyra ()

(c) Ectocarpus ()

(d) Vaucheria ()

15. The thallus structure of Vaucheria is

(a) haploid, aseptate, branched and coenocytic ()

(b) diploid, septate and unbranched ()

(c) nonfilamentous and septate ()

(d) None of the above ()

(72)

3. Write down the trogonic cycle.

SECTION—II

(Marks : 10)

Answer/Write on any *five* of the following in few sentences : $2 \times 5 = 10$

1. What is growth?

2. What are macronutrients?

(Marks : 10)

Answer/Write on any five of the following in few sentences :
2×5=10

1. What is growth?

(a) Spirogyra

(c) Ectocarpus

(d) Vaucheria

13. The thallus structure of Vaucheria is

(a) haploid, aseptate, branched and coenocytic

(b) diploid, aseptate and unbranched

(c) unbranched and aseptate

(d) None of the above.

(12)

(9)

5. Write a short note on the range of thallus

3. Write down the difference between lytic and lysogenic cycle.

(10)

4. Give the general characteristics of bacteria.

5. Write a short note on the range of thallus organization in algae.

6. Occurrence of *Oedogonium*

7. Reproduction in Nostoc

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