

Roll No. ....

**E-320**

**M. Sc. (First Semester)**  
**EXAMINATION, Dec.-Jan., 2020-21**

BOTANY

Paper Third

**(Microbiology, Phychology and Mycology)**

*Time : Three Hours ]*

*[ Maximum Marks :80*

*[ Minimum Pass Marks : 16*

**Note :** Attempt all Sections as directed.

**Section—A**

1 each

**(Objective/Multiple Choice Questions)**

**Note :** Attempt all questions.

Choose the correct answer :

1. Which plant is used as green manure ?

- (a) Mycoplasma
- (b) Anabaena
- (c) Bacteria
- (d) All of the above

**P. T. O.**

2. Protein coat of virus is called :
  - (a) Plasmid
  - (b) Genome
  - (c) Capsid
  - (d) Nucleic acid
3. Mesosomes are present in :
  - (a) Mycoplasma
  - (b) Bacteria
  - (c) Viruses
  - (d) Fungi
4. Bacteria which in association with legume root and fix atmospheric nitrogen are called :
  - (a) Azotobacter
  - (b) Rhizobium
  - (c) Pseudomonas
  - (d) All of the above
5. Cyanobacteria are :
  - (a) Photoautotrophs
  - (b) Chemoautotrophs
  - (c) Photoheterotrophs
  - (d) None of the above

6. Sexual reproduction is absent in :
- (a) Diatoms
  - (b) Green algae
  - (c) Cyanobacteria
  - (d) Brown algae
7. Oscillatoria shows which type of movements ?
- (a) Gliding
  - (b) Oscillatory
  - (c) Bending
  - (d) All of the above
8. Which one of the following are archaebacteria ?
- (a) Cyanobacteria
  - (b) Green sulfur
  - (c) Rickettsias
  - (d) Methanogens
9. Escherichia coli is :
- (a) Gram '+ ve'
  - (b) Gram '- ve'
  - (c) Bacteriophage
  - (d) Both Gram '+ ve' and Gram '- ve'

10. Solution of crystal violet, iodine and alcohol is used in a staining procedure known as :
- (a) Acid-fast stain
  - (b) Gram stain
  - (c) Giemsa's stain
  - (d) Wright's stain
11. Which pigment is present in Phaeophyceae ?
- (a) Chlorophyll-‘a’
  - (b)  $\beta$  Carotene
  - (c) Fucoxanthin
  - (d) Chlorophyll-‘b’
12. Which of the following is commonly called ‘Water net’ ?
- (a) Volvox
  - (b) Chlorella
  - (c) Hydrodictyon
  - (d) Sargassum
13. Heterotrichous habit is shown in :
- (a) Oedogonium
  - (b) Hydrodictyon
  - (c) Cladophora
  - (d) Fritschiella

14. A non-flagellated male gamete or spermatium is a characteristic feature of :
- (a) Chlorophyceae
  - (b) Xanthophyceae
  - (c) Phaeophyceae
  - (d) Rhodophyceae
15. Reserve food material laminarin and mannitol are found in :
- (a) Bacillariophyceae
  - (b) Xanthophyceae
  - (c) Phaeophyceae
  - (d) All of the above
16. Clamp connections are present in :
- (a) Ascomycetes
  - (b) Oomycetes
  - (c) Deuteromycetes
  - (d) Basidiomycetes
17. Members of class Myomycetes are known as :
- (a) true slime molds
  - (b) amoeboid plasmodia
  - (c) pseudo slime mold
  - (d) None of the above

18. Diplanetism is found in :

- (a) Phytophthora
- (b) Albugo
- (c) Saprolegnia
- (d) Alternaria

19. Smut disease is caused by :

- (a) Peziza
- (b) Ustilago
- (c) Fusarium
- (d) Cercospora

20. The phenomenon of parasexuality was discovered by :

- (a) Blakeslee
- (b) Alexopoulos and Mims
- (c) Pontecorvo and Raper
- (d) None of the above

**Section—B**

2 each

**(Very Short Answer Type Questions)**

**Note :** Attempt any *eight* questions.

1. Name the microbiologist who discovered transduction.
2. Name the protein present in the flagella of bacteria.
3. Name the nitrogen fixing bacterium of root nodule in a leguminous plant.

4. Define plasmid.
5. Name the principal pigment which is responsible for blue green colour of cyanobacteria.
6. Name the *two* cyanobacteria which have heterocysts.
7. Cell wall composition of bacterial cell.
8. Name the autoecious and heterocious rust fungus.
9. What are the main dominant pigment found in Rhodophyceae ?
10. Name any *two* plant diseases caused by viruses.

**Section—C**

3 each

**(Short Answer Type Questions)****Note :** Attempt all questions.

1. Describe the process of conjugation.
2. Discuss fungi as a Biocentrol agent.
3. Define the capsid of virus.
4. Name the types of symmetry found in viruses.
5. Define the cleistothecium fruiting body.
6. Describe the structure of T. M. V. (Tobacco mosaic virus).
7. Describe the process of somatogamous copulation.
8. Write a note on coenobium with example.

**Section—D**

5 each

**(Long Answer Type Questions)****Note :** Attempt all questions.

1. Write a brief note on Archebacteria.

*Or*

Describe the transmission of Viruses.

2. Describe the process of transformation in bacteria.

*Or*

Describe the ultrastructure of virions.

3. Discuss habit and habitat of algae.

*Or*

Explain Isomorphic alternation of generation with suitable example.

4. Write a note on Economic importance of Diatoms.

*Or*

Describe briefly fruiting body in fungi.