

M. Sc. BOTANY
FIRST SEMESTER
LOWER CRYPTOGRAMS
MSB - 101

Duration: 3 Hrs.

Marks: 70

PART : A (OBJECTIVE) = 20
PART : B (DESCRIPTIVE) = 50

[PART-B : Descriptive]

Duration: 2 Hrs. 40 Mins.

Marks: 50

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

1. Write an account on the heteroecious habit of fungi encompassing the life cycle of a very important fungus. 10
2. Write in brief the nutritional diversity of bacteria. 10
3. Write in brief the different mechanisms of genetic recombination in bacteria. 10
4. What are the criteria for basis of classification? Discuss the role of pigments for the classification of algae. 2+8=10
5. Write short notes on: 5+5=10
 - a. Biological importance of phytoplankton
 - b. Mac-donald Pfizers law of progressive diminution in auxospore formation
6. Write a vivid description on the economic importance of lichen. 10
7. "Virus is neither living nor non-living, but an intermediate between living and non-living". Justify this statement. 10
8. Explain the transcriptional switch of λ bacteriophage regulating lytic and lysogenic cycle with proper diagram. 10

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[PART-A : Objective]

Choose the correct answer from the following:

1×20=20

1. Diatomin is found in
 - a. Chlorophyceae
 - b. Bacillariophyceae
 - c. Xanthophyceae
 - d. Phaeophyceae
2. Cryptoblasts are found in
 - a. Ectocarpus
 - b. Fucus
 - c. Polysiphonia
 - d. Batrachospermum
3. Monospores are formed in
 - a. Chlamydomonas
 - b. Chara
 - c. Microcystis
 - d. Batrachospermum
4. Synzoospores are found in
 - a. Chlorella
 - b. Volvox
 - c. Vaucheria
 - d. Chara
5. Redrust disease is caused by
 - a. *Microcystis aeruginosa*
 - b. *Cephaleuros virescens*
 - c. *Cephaleuros coffeae*
 - d. None above
6. The iodine used in Gram staining serves as
 - a. Chelator
 - b. Catalyst
 - c. Mordant
 - d. Co-factor
7. Bacterial chromosome is
 - a. Single stranded and circular
 - b. Double stranded and circular
 - c. Single stranded and linear
 - d. Double stranded and linear

8. Aflatoxin is produced by which of the following fungi?
a. *Aspergillus flavus*
b. *Curvularia lunata*
c. *Alternaria solani*
d. *Claviceps purpurea*
9. Which of the following is an aquatic fungi?
a. *Saprolegnia parasitica*
b. *Synchytrium endobioticum*
c. *Pyricularia oryzae*
d. *Aspergillus niger*
10. Which of the following fungi shows polymorphism?
a. *Penicillium chrysogenum*
b. *Penicillium italicum*
c. *Puccinia graminis tritici*
d. *Ustilago zea maydis*
11. Who amongst the following is the author of "*Nova Plantarum Genera*"?
a. Wasson
b. Gaiiman
c. Pier Antonio Micheli
d. V.W. Cochrane
12. Who first crystallized virus?
a. Stanley
b. Griffith
c. Beijerinck
d. Ivanowski
13. Who first developed vaccine?
a. Louis Pasteur
b. Adolf Mayer
c. Beijerinck
d. Edward Jenner
14. Which gene encode lambda repressor protein?
a. cI
b. N
c. Cro
d. cII
15. The PrP^{sc} form of prion is formed due to modification of
a. α -helix of PrP^c into β sheet.
b. β sheet of PrP^c into α -helix.
c. Amino acid sequence
d. Tertiary structure
16. Icosahedral symmetry is found in
a. Simian virus 40
b. T2 bacteriophage
c. λ -bacteriophage
d. Measles virus
17. Human Hepatitis B virus replicate by
a. RNA as intermediate
b. Directly to DNA
c. Directly to RNA
d. DNA as intermediate
18. The role of sigma factor gp55 in lytic cycle
a. Helps DNA polymerase to replicate
b. Helps RNA polymerase to bind late promoters
c. Helps RNA polymerase to bind early promoters
d. None of the above
19. The chemicals produced by immune system against virus is
a. Carbohydrate
b. Interferon
c. Antibody
d. Antigen
20. 16S rDNA gene is used for molecular characterization of
a. Fungi
b. Algae
c. Virus
d. Bacteria

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