



Karanjia Auto College, Karanjia, Mayurbhanj

GE-1A: Biodiversity (Microbes, Algae, fungi, Archegoniates)

Unit-1

1.OBJECTIVE QUESTIONS

(1 marks)

1. Viruses are made of _____.
2. Viruses attacking blue green algae are called as _____.
3. Viruses was 1st isolated by _____.
4. In TMV the genetic material is _____.
5. Viruses are _____ parasites.
6. In bacteriophage the genetic material is _____.
7. Naked proteinaceous infective particle are called _____.
8. Phages showing lysogeny are called _____ phages.
9. The time period from infection until lysis is called _____ period.
10. Naked RNA having infectious property called _____.
11. The number of capsomeres present in TMV is _____.
12. The length of Tail fiber is _____.
13. The length and width of TMV is _____.
14. The enzyme present in the core tube of bacterio phage is _____.
15. In HIV the genetic material is _____.
16. The virus in which double stranded RNA is found in _____.
17. The virus in which single stranded DNA is found is _____.
18. Mad Cow disease is caused by _____.
19. _____ is the connecting link between living and non-living.
20. Phycophages are the virus attacking _____.
21. Salt loving bacteria are called _____.
22. _____ is called Wall less bacteria.
23. _____ is called Jokers of Plant Kingdom.
24. _____ is the smallest cell.
25. _____ is the common method and reproduction in Bacteria.

26. _____ is the organ of perennation in Bacteria.
27. _____ in the organ of respiration in Bacteria.
28. In Bacteria Asexual reproduction mostly occur through the production of _____.
29. In Bacteria Genetic recombination occur through _____, _____ and _____.
30. Bacterial Transformation was discovered by _____.
31. Bacterial cell wall is made of _____.
32. Extra chromosomal small pieces of circular DNA having the capacity of self independent replication found in the Bacterial cell called _____.
33. Pilli is made up of a protein called _____.
34. The protein present in Bacterial Flagella is called _____.
35. Antibiotic resistance genes are located in _____.
36. The Bacteria having F-plasmids are called _____.
37. The Bacteria that converts Ammonia to Nitrate is called _____.
38. The bacteria that convert Nitrite and Nitrate is called _____.
- 39.
40. The transfer of DNA from one bacterium to another without coming close in contact with each other is called _____.
41. Specialized transduction is shown by _____ Phage.

2. Answer within 1 to 2 sentences (1.5 marks)

1. What is ecliptic period?
2. Write the 4 plant diseases caused by virus?
3. What are viroid and priors?
4. What is burst size?
5. What is monoauxic growth?
6. What is diauxic growth?
7. What is synchronous growth?
8. What is lysogeny?
9. What is Transduction?
10. Write briefly about bacterial genome?
11. What is sphaeroplast?
12. What are Thermoacidophites?
13. What are Methanogens?

14. What is genetic recombination? How it occurs?

3. Answer within 75 words (2 marks)

1. Write 3 to 4 important characteristics of viruses?
2. Briefly describe the structure of TMV?
3. Briefly describe the structure of Bacteriophage?
4. Write the general structure of Viroid?
5. Write the general structure of Prion?
6. Write a Brief note on Mycoplasma?
7. What is archaea bacteria? What are its different types?
8. Write short notes on Bacterial Cell wall?
9. Mentions the steps of Grayfish Experiment?
10. Briefly describe Binary fission?

4. Answer within 500 words (6 marks)

1. Describe the lytic life cycle of bacteriophage?
2. Describe the Economic importance of virus with reference to medicine and role in research.
3. Describe the structure of Bacterial Cell?
4. Describe the nutritional types in Bacteria?
5. Describe the reproduction in Bacteria?
6. Describe the process of Genetic Recombination in Bacteria? **Unit-2**

(1) Fill in the blanks

[1X8=8]

1. _____ is known as father of Indian Algology.
2. Nostoc belongs to class _____.
3. specialized thick walled photo-synthetically inactive cells found in cyanophycean member called _____.
4. Reproduction in Nostoc is only by _____ method.
5. Intercalary hetero-cysts are found in each _____ of Nostoc.
6. Nostoc is helpful in fixing atmospheric _____.
7. Nostoc have been reported from India by scientist _____.
8. The protoplasmic structure found in cyanobacteria is distinguished to central centroplasm and a peripheral _____.

Q.2 write short notes {one to two sentences} [1.5X8=12]

1. chromoplasm
2. Heterocysts
3. Hormogones
4. Akinates
5. Hair vegetable
6. Nostoc colony
7. centropiasm

(3) Answer the following {75 words} [2X8=16]

1. cell wall of cyanophycean cell
2. Pigments in cyanophycean
3. Role of blue green algae in biotechnology
4. cyanotoxin
5. Functions of Heterocysts
6. position of heterocysts
7. c-phycoyanin

(4) Answer the following questions {500 words} [6x4=24]

1. Discuss the salient features of class cyanophyceae?
2. Give an account of economic importance of blue green algae?
3. Describe the life history of Nostoc?
4. Give an account of the cell structure of a cyanophycean cell?

Unit-2

1. Fill in the blanks (1×8)

1. _____ is the advanced type of sexual reproduction in algae .
2. Agar agar is produced by certain _____ algae.
3. According to R.E .Lee Algae is classified into _____ distinct groups.
4. Motile colonial forms of thallus sometimes remain in a common association forming a colony _____.

5. Palmelloid stage is seen in vaucheria algae . {correct if any error} 6.

In _____ only one mitochondrion per cell is seen micromonas.

7. The major storage substance in algal cell is _____.

8. When trichomes break into small pieces of two or more cells called _____.

9. Gongrosira stage is seen in _____ algae.

10. Iodine is produced from kelps in _____ algae.

Q.2 write short notes {one to two sentences } [1.5 X8=12]

1. Distinguish character of chlorophyceae.

2. Algae as food.

3. Role of algae in sewage disposal.

4. Why the water surface gives froth or foam like appearance.

5. What is the reason to grow algae in sewage pond.

6. Distinguish between isogamy and oogamy.

7. Write about siphonaceous thallus of algae in brief.

8. What is the most common method of asexual reproduction .

9. Write note on pigments in algae.

10. Role of algae in nitrogen fixation .

(3) write short notes {75 words } [2X8=16]

a. Zoospore b. prokaryotic algae

b. c. unicellular motile thallus

d. Uniaxial thallus e. Heterotrichous habit f. Akinetes

g. Algae habitat h. coenobium i. Isogamy j. Aplanospore

(4) Answer the following questions { 500 words } [4x6=24]

Describe different type of thalli found in algae ?

Give an account in economic importance of algae ?

Describe the major classification of algae ?

Write the methods of asexual reproduction in algae?

Unit-2

1. Fill in the blanks (1 mark each)

- a) The colony of volvox is termed as _____
- b) The female gametangia of volvox are known as _____
- c) Cap cells are characteristics of _____
- d) The shape of chloroplast in oedogonium is _____
- e) _____ algae is having siphonaceous thallus
- f) Fusion of two similar gametes is called _____
- g) Thick walled vegetative cell rich in food materials are known as _____
- h) All unicellular algae have one photosynthetic pigment in common. It is _____

Q2. Short Answer type : - Answer the questions 2-3 sentences a)

What are whiplash flagella?

- b) What is the most advanced type of sexual reproduction in algae?
- c) What is the composition of cell wall in green algae?
- d) Name an order of class chlorophyceae that shows Coenobia?
- e) Name one species of chlamydomonas which show anisogamy?
- f) What are agglutinins?
- g) Differentiate between aplanospore & hypnospore?
- h) in which alga is found plakea stage?

Q3. Short Answer type : - Answer the questions within 75 words a)

Cellwall in Algae

- b) Zoospores
- c) Lee's system of algal classification
- d) Algae classification by Fritsch
- e) Algae in industry
- f) Akinetes
- g) Heterocyst
- h) Algae as food & fodder

Q4. Long Answer type : - Answer the questions within 500 words a)

Give an account of classification of Algae?

- b) Describe the sexual reproduction in eukaryotic algae?

- c) What do you mean by life cycle? Discuss different types of life cycle found in algae?
- d) Discuss the Various economic was of algae?
- e) Give a note on the contribution of famous Indian phycologists?
- f) Discuss the sexual reproduction in oedogonium?
- g) Give an account of thallus organization and reproduction of volvox?
- h) Write the life history of chlamydomonas?

Unit-3

Unit-1

(1) Answer the following questions:(1×8)

- (i) The basal swollen portion of archegonium is called_____.
- (ii) ____ is the dominant phase in bryophytes.
- (iii) ____ is known as bog moss.
- (iv) The antherizoids of funaria are _____.
- (V) ____ is present in center of the capsule.
- (Vi) Spore dispersal is aided by _____.
- (Vii) In mosses, meiosis takes place during_____.
- (Viii) The leaves adjacent to sex organs are called_____.

(2) Answer the following questions:(1.5×8)

- (i) Write notes on Protonema (ii) Gemmae
- (iii) Archegoniates (iv) Amphibians of plant kingdom
- (V) Capsule
- (Vi) Alternation of generation
- (Vii) Columella. (Viii) Apospory
- (ix) Elaters (X) Archesporium

(3) Answer the following questions:(2×8) (i)

Classification of bryophytes

(ii) Anatomy of Marchantia thallus

(iii) Sporogonium of Anthoceros

(iv) Vegetative reproduction in Riccia

(V) Economic uses of Sphagnum

(Vi) Funaria capsule

(Vii) Peristome of Funaria

(Viii) Spore dispersal of mechanism of Funaria

(ix) Thallus of Riccia

(X) Origin of land plants

(4) Answer the following questions:(6×4)

(i) Describe various adaptive features of Archegoniates to survive on land?

(ii) Describe the alternation of generation in Archegoniates?

(iii) Give an account of life history of Riccia?

(iv) Describe the ecological and economical importance of bryophytes?

(V) Draw a labelled and diagrammatic life cycle of Marchantia and show alternation of generation?

(Vi) Describe the Sporogonium of Anthoceros and point out its advanced features?

(Vii) Give a brief account of life history of Funaria?

(Viii) Describe the evolutionary trends in sporophytes of bryophytes? **Unit-**

3

Q.1 Fill in the blanks : (1X8=8)

a. Telome theory was proposed by _____.

- b. A vascular bundle where xylem forms the central part and is completely surrounded by phloem called _____.
- c. Selaginella produces two types of spores, this condition is called _____.
- d. When sporangium develops from a single initial called _____.
- e. _____ are treated as first vascular and seedless land plants.
- f. In Marsilea, the sporangia are produced in a specialized structure called _____.
- g. Heterospory leads to seed habit is seen in Selaginella (correct it if error is there).
- h. Apogamy is the development of a sporophyte directly from _____ without the help of sex organs.

Q.2 write short notes in 1-2 sentences (1.5X8)

- a. Ribbon fern b. Whisk fern
- c. Selaginella rhizophore d. Plectostele
- e. living fossil f. Development of leptosporangiate sporangium
- g. Apospory h. Advantages of a seed

Q.3 write short notes within 75 words (2X8=16)

- a. Economic importance of pteridophyta
- b. Telome theory c. Beech fern / Male shield fern
- d. gametophytic generation in pteridophyte
- e. Siphonostele f. Alternation of generation
- g. Function of indusium
- h. Equisetum strobilus

Q.4. Answer the following questions within 500 words (6X4)

1. Discuss the stellar evolution in pteridophyta ?

2. describe briefly the life history of pteris ?
3. Describe the life cycle of psilotum?
4. Discuss the mode of reproduction in selaginella?
5. Discuss the morphological nature of sporocarp in marsilea?
6. Discuss the anatomical features of aerial stem of Equisetum?

Unit-4

1. Objective type questions (1 mark each)

1. In gymnosperm the ploidy of endosperm is _____.
2. Generally in Gymnosperm the ovule is of _____ type?
3. Coralloid root is found in _____.
4. The gymnosperm in which the Archegonia is absent in _____.
5. In gymnosperm the pollination is of _____ type.
6. _____ is called as maiden hair tree.
7. _____ is called living fossil.
8. The main function of coralloid root is _____.
9. Winged pollen grain is found in _____.
10. In _____ the male cone is largest.
11. In _____ the ovule is largest.
12. Pinus comes under the order _____.
13. Each arch gonium of cycas consist of 2 _____ cell, a _____ nucleus and an _____.
14. In cycas the shedding and pollen grain takes place at _____ celled stage.
15. In cycas the male gametes are formed from _____ cell.
16. The starch extract of cycas stem is called _____.
17. _____ is the oldest living seed plant.
18. The branches of Ginkgo biloba are _____ in nature.
19. _____ type of stomata are restricted to only lower epidermis of Ginkgo leaf.
20. The development of microsporangium in Ginkgo is of _____ type.
21. In Ginkgo the microspores are dispersed at the _____ celled stage.
22. Tent pole is found during the development of _____ in Ginkgo.
23. In Ginkgo and Cycas the seed Germination is of _____ type.

24. _____ is regarded as Holy tree by Buddhist monks.
25. _____ is called as white fruit tree.
26. _____ is called as Grandfather – Grandson tree.
27. In generation the component of Xylem agent in _____.
28. The component of Phloem absent in Gymnosperm is _____.
29. Algal zone is found in _____ of cycas.
30. In Cycas rachis the vascular bundles are arranged in the shape of _____.
31. _____ is popularly known as “chir”.
32. In pinus the dwarf shoots are also known as _____.
33. In pinus Resin canal is found between the bifurcation of _____.
34. In pinus the development of Micro-sporangium is of _____ type.
35. In the pollen grain of pinus the exine and intine are also called as _____ and _____ respectively.
36. In Pinus the pollination occur at _____ celled stage.
37. In Gnetum root casporian strips are found in the cells of _____.
38. The gymnosperm in which vessel is present in _____.
39. The leaf of Gnetum represents the leaf of _____.
40. In the young stem of genum the stomata is of _____ type.
41. In the young stem of Gnetum the vascular bundles are _____ type and arranged in _____ manner.
42. In Gnetum the innermost wall layer enclosing the sporogenous tissue is known as _____.
43. The pollination in Gnetum occur at _____ called stage.
44. In Gymnosperm a cell similar to companion cell found and is called _____.
45. Tetrasporic development of female gametophyte is found in _____.

2. Answer in 1 to 2 sentences:- [1.5 marks]

- (1) What is celluloid root?
- (2) How many types of leaves are found in pinus? What are those?
- (3) What is transfusion tissue?
- (4) What is male cone?
- (5) What is female cone?
- (6) What is eusporangiate type of development?
- (7) What is leprosporangiate type of development?
- (8) Why the Gymnosperm are called naked seeded plants?

(9)What is the nature of wood of Cycas and Pinus?

(10)What is siphongamy and zoodiogany?

3.Answer within 75 words [2 marks]

(1)Write a brief note on Morphological mature of the ovuliferous scale of Pinus?

(2)Write a short note on Endosperm of Gymnosperm?

(3)Write a short note on ovule of Gymnosperm?

(4)Write a short note on coralloid root of Cycas?

(5)Briefly describe the male cone of Cycas?

(6)Briefly describe the megasporophyll of cycas?

(7)Write short note on female flower of Gnetum?

(8)Outline the classification of Gymnosperm?

4.Answer within 500 words [6 marks]

(1)Describe the life cycle of Cycas?

(2)Describe the life cycle of Pinus?

(3)Describe the life cycle of Ginkgo?

(4)Describe the life cycle of Gnetum?

(5)Describe the Angiospermic character of Gnetum?