

IMPORTANT QUESTIONS CLASS – 11 BIOLOGY

CHAPTER - 2 BIOLOGICAL CLASSIFICATION

Question 1.

What are imperfect fungi?

Answer:

Asexually reproducing fungi belonging to Deuteromycetes are imperfect fungi

Question 2.

How many basidiospores are formed after Karyogamy and meiosis?

Answer:4

Question 3.

What is plasmogamy?

Answer:

Fusion of protoplasts between two motile or non-motile gametes.

Question 4.

What are the slime molds?

Answer:

1. The slime molds are both plant and animal-like.
2. They are plant-like in the production of spores during reproduction and animal-like in the mode of nutrition and rheumatic organization.
3. Their rheumatic structure consists of an acellular, multinucleate mobile mass of protoplasm which lacks a good wall called plasmodium.
4. The reproductive stage consists of sporangia and spores formed after meiosis. The spores on germination produce either flagellated swarm cells or myxamoebae.
5. These divide mitotically, then behave as gametes and fuse in pairs to form a diploid zygote. The zygote nucleus divides mitotically but the nuclear division is not followed by cell wall formation so that all nuclei lie free in the cytoplasm.

6. The enlargement of the zygote into plasmodium takes place which moves freely on the substratum and feeds on bacteria, fungal and algal spores, and also absorbs nutrients directly from the substratum. The plasmodium then settles on dry places and develops into sporangia. Therefore asexual stage is plant-like and the sexual stage is animal-like.

Question 5.

Write a short note on kingdom Plantae.

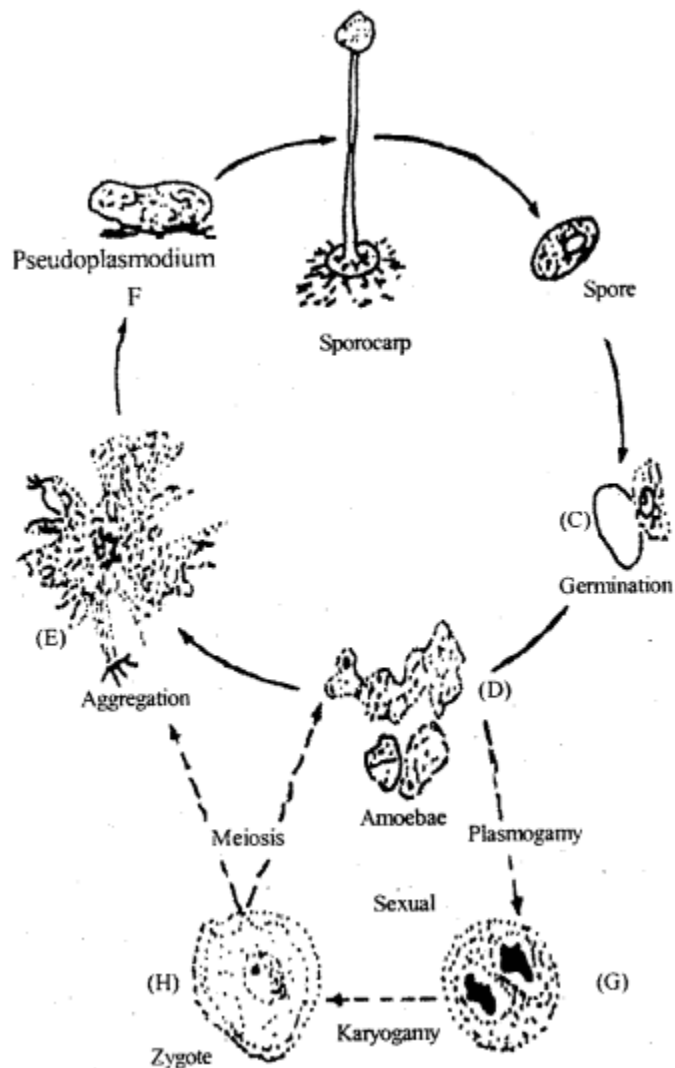
Kingdom Plantae

Answer:

1. Kingdom Plantae includes all autotrophic plants which are photosynthetic forms called green plants starting from simple algae, bryophytes, pteridophytes to gymnosperm and angiosperms.

2. The plant cell has a cell wall mainly made of cellulose and, eukaryotic structure with prominent chloroplasts. Some plants are heterophilic like insectivorous plants which feed on insects and flies e.g. Bladderwort and Venus flytrap.

(3) The life cycle has two phases- sporophytic and gametophytic which are diploid (2n) and haploid (n) respectively. That means zygote (2n) undergoes meiosis to form haploid (n) spores these spores germinate into a gametophyte, then these gametes (male and female) fuse to form a zygote (2n) again which gives rise to the sporophyte. This phenomenon is called the alternation of generation.



Question 6.

Write a short note on Mycoplasma.

Answer:

1. Discovered by E.Nocard and E.R. Roux (1998) mycoplasma is the smallest known aerobic prokaryotes without a cell wall.
2. They were isolated from cattle suffering from bovine pleuropneumonia and hence they were designated as PPLO (pleuropneumonia-like organisms)
3. They are found in different forms as a spheroid, thin, stellate called pleomorphic.
4. They occur in soil, sewage, human, and plants.

Question 7.

Write a short note on Kingdom Animalia.

Answer:

1. Kingdom Animalia includes all animals except the protozoan. The members are multicellular eukaryotes. The cell wall is absent cells, organized into tissue. They directly or indirectly depend on plants for food.
2. They digest their food in an internal cavity and store food reserves as glycogen or fat. They are heterotrophic and the mode of nutrition is holozoic nutrition. They act as decomposers and help in the recycling of minerals.
3. Kingdom Plantae includes the multicellular, photosynthetic eukaryotic forms.
4. They have well-established mechanisms for absorption and Kingdom Animalia includes all animals except the protozoans. They are multicellular eukaryotes and are holozoic. The cells lack walls.

Question 8.

Write a short note on Lichens.

Answer:

Lichens are a symbiotic association between algae and fungi. The algae component is known as phycobiont and the fungal component as mycobiont which are autotrophic and heterotrophic respectively. Algae prepare food for fungi and fungi provides shelter and absorbs mineral nutrient and water for its partner.

On the basis of the structure of thallus, lichens can be classified into three types

1. Crustose: forms a crust on the substrate which is not easily separated from the substrate e.g. Graphis
2. Foliose: forms the leafy lobed structure attached to the substrate with the help of rhizines easily separated from substrate eg. Parmelia.
3. Fruticose: forms shrubby, cylindrical, and branched thallus. They grow erect or hang from the substrate e.g. Usnea. Lichens are the pioneer colonizers of bare rocks. They also colonize tree trunks in temperate climatic regions.

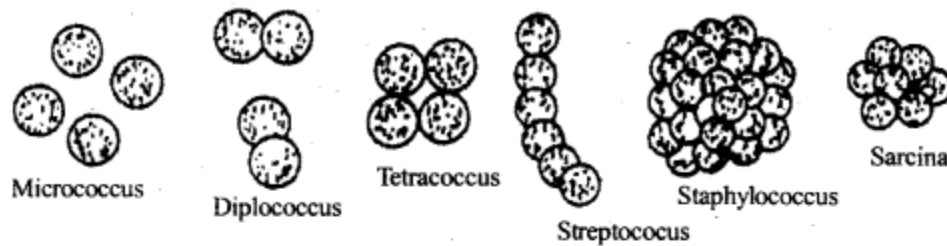
Question 9.

Describe the kingdom Monera.

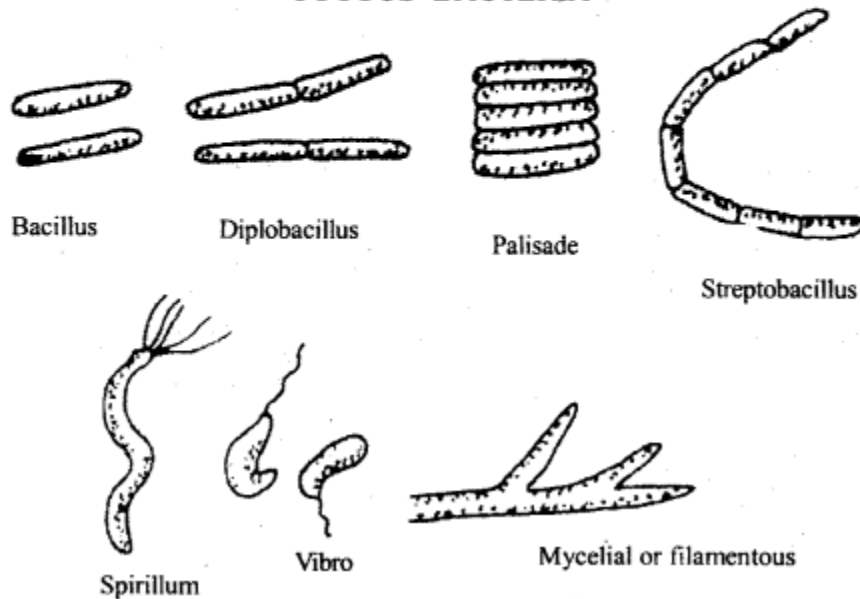
Answer:

This kingdom comprises single-celled prokaryotic organisms like bacteria, filamentous actinomycetes, and photosynthetic blue-green algae of Cyanobacteria. The salient features are already given in Table 2.1 we will further discuss the following organisms briefly.

Bacteria: Bacteria are single-celled microscope true prokaryotic organisms which are almost omnipresent. They colonize soil, water, and air. These can survive



COCCUS BACTERIA



in extreme environmental conditions like high temperature, high salt concentration, in absence of oxygen (anaerobic) or in presence of oxygen (aerobic) in high acidic or alkaline pH, etc. (sometimes these are called Archaeobacteria).

Some bacteria can be chemotrophs that derive energy from inorganic compounds in absence of oxygen e.g. methanogenic bacteria produce methane gas (CH_4) from CO_2 and H_2 , some live by oxidizing hydrogen supplied eg. Thiobacillus.

Some are parasites on plants and animals e.g. *Xanthomonas citri* and *Vibrio Cholera*; another form symbiotic association with plant roots e.g. *Rhizobium*.

The bacteria can be of various sizes and shape i.e. spherical or round, coccus (pi. cocci), rod-shaped and bacillus (pi. Bacilli), spiral-shaped spirillum (pi. Priscilla). Long and helical shaped called spirochetes. Many bacteria have one or more slender, long flagellum (pi. flagella) which helps them to move in the liquid substrate. Some bacteria form endospores under poor nutrient conditions.

Question 10.

Write the distinct characters of protozoa.

Answer:

1. Protozoa are single-celled heterotrophs or 'first animal'. They can be free-living and parasitic members, mobile with flagellar movement, by pseudopodia, or by ciliary movements e.g. *Euglena* and *Amoeba*.
2. Cell wall is absent in some like *Amoeba* so they can change their shape. The *Euglena* is autotrophic because of the presence of chlorophyll it performs photosynthesis but in the absence of light, it becomes heterotrophic and ingests other protists or food particles.
3. They reproduce asexually by binary fission but some reproduce sexually by fusion of gametes followed by meiosis. Another important member of protists is the malarial parasite, *Plasmodium*, causing the notorious disease malaria in man, carried by mosquitoes, it multiplies rapidly in the liver of humans and brings about the cyclic fever releasing toxins into the bloodstream of its host.

