LESSON – FIVE KINGDOM CLASSIFICATION

I. Short answer question

A. Give reason

1. It is important to classify organisms

Classification helps in establishing the relationship among various groups of organisms and to study the evolutionary history of organisms. By studying a few organisms, the characteristics of the whole group can be known.

2. Amoeba has flexible and Porous membrane

It allows the amoeba to change its shape. It also controls the entry and exit of substances into and out of the cytoplasm.

3. Animals are heterotrophic organisms

Animals are called heterotrophic because they cannot synthesis their own food but depend on plants for food, directly and indirectly.

4. Some hyphae in Rhizopus grow downwards

Some hyphae grow downwards to obtain nutrients from the organic medium (forming root like structures) called rhizoids.

5. At times, Amoeba reproduces by multiple fission

Multiple fission occurs in amoeba to survive and reproduce under unfavourable conditions.

B. Answer the following questions:

1. Write a short note on the different shapes of bacteria.

The four different shapes of bacteria are bacilli (rod shaped), cocci (spherical),spirilla (spiral) and vibrios (comma).

Cocci (for a single cell) are round cells, sometimes slightly flattened when they are adjacent to one another.

Bacilli (or bacillus for a single cell) are rod-shaped bacteria.

Spirilla (or spirillum for a single cell) are curved bacteria, which can range from a gently curved shape.

Vibrios are comma shaped bacteria, which cause serious diseases in humans and other animals.

2. Write two harmful and useful aspects of bacteria and fungi.

Useful bacteria:

Lactobacillus coverts milk in to curd.

Acetobacter for making vinegar, wine and fruit juices.

Useful fungi:

Button mushroom and morel are edible fungi.

Pencillium is used for the production of antibiotic pencillin.

Harmful bacteria:

Vibrio cholera causes cholera (severe watery diarrhoea)

Salmonella typhi causes typhoid fever.

Harmful fungi:

Rhizopora spoilage of fruits and food.

Tinea fungus causes athlete's foot.

3. What is the role of cytoplasm in amoeba?

Cytoplasm is the living substance in which all the chemical reactions necessary for life is carried out. There are two types of cytoplasm in amoeba .The darker cytoplasm towards the interior of the amoeba is called endoplasm, and the clearer cytoplasm that is found near the cell membrane is called ectoplasm.

4. With the help of a diagram, explain nutrition and excretion in amoeba.

When the amoeba senses food, the endoplasm pushed towards the cell membrane and forms a food vacuole. The cytoplasm secretes digestive juices and digest the food particle and soluble food products thus formed are absorbed back in to the cytoplasm. when sufficient amount of undigested food gets collected in the food vacuole it is excreted out of the body by rupturing the cell membrane.

5. How do monerans, protists and fungi respire?

Monerans, protists and fungi respire through diffusion of gases. The respiration in bacteria can be aerobic or anaerobic. Fungi – diffusion of gases through hyphal walls.

II. Distinguish between the following

1. Amoeba and Bacteria

Amoeba	Bacteria
i)Single celled eukaryotes	Single celled prokaryotes.
ii)Amoeba possess a definite nucleus	Bacteria do not have membrane enclosed nucleus.
iii)Locomotion in bacteria takes place through pseudopodia	Locomotion in bacteria takes place through flagella.

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2. Fungi and plantae

Fungi	Plantae
i) Fungi are a group of heterotrophic living organisms and they have complex eukaryotic cells like plants and animals.	Plants are multicellular, autotrophic eukaryotes.
ii)Cell wall made up of chitin	Cell wall made up of cellulose

3. Binary and multiple fission

Binary fission	Multiple fission
It is a kind of asexual reproduction in amoeba takes place during favourable conditions.	It is a kind of asexual reproduction in amoeba takes place during unfavourable conditions.
Nucleus and cytoplasm splits equally giving rise to two daughter cells.	Nucleus and cytoplasm divides repeatedly to form many new daughter cells.

4. Mycelium and sporangium

Mycelium	Sporangium
The branching network of hyphae is called mycelium.	The swollen tip of hyphae is called sporangium.
Mycelium is the vegetative part of a fungus with a network of hyphae with many nuclei.	The sporangium is a single celled or many celled structure in which spores are produced.

III. Challenge questions:

1. Why does Rhizopus not grow in the lower layer of bread?

The Rhizopus does not grow in the lower layer of bread because it does not get enough air and moisture.

2. Why are pseudopodia called false foot?

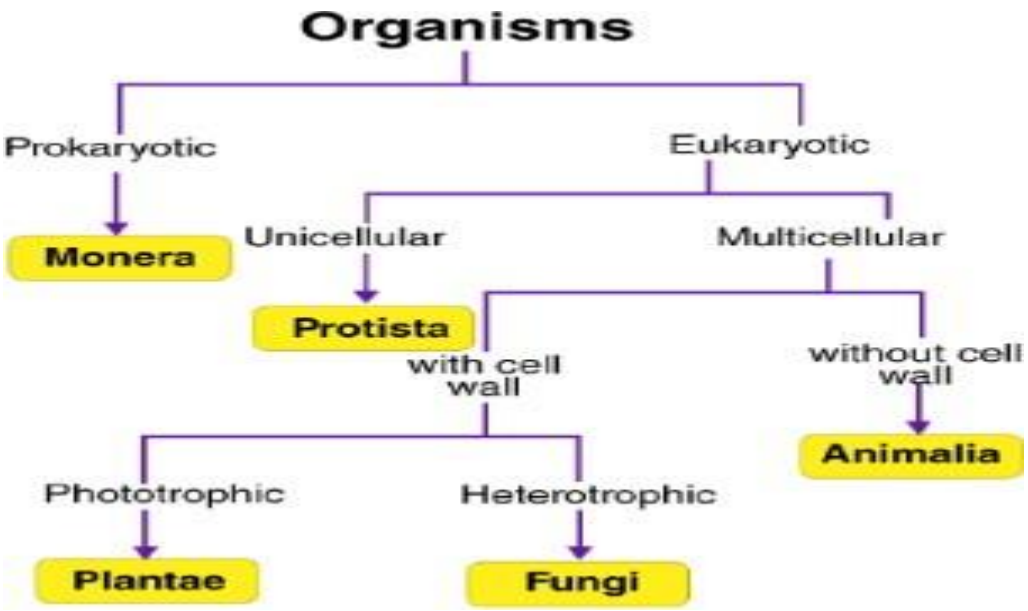
Pseudopodia are temporary and cytoplasm- filled parts of the cell wall that can change their form in order to move. So, they are called false foot.

WORKSHEET - 1

FIVE KINGDOM CLASSIFICATION – ANSWER KEY

1. Complete the five kingdom method of classification in the flow chart given below:

Answer:



2. Identify and name the cell given below and label the parts.

Answer: A – DNA , B – Plasma membrane , C – Flagella , D – Pilus , E – Capsule ,

F - Cytoplasm

3. Name the different shapes of bacteria.

Answer: A – Cocci , B – Bacillus , C- Spirilla , D - Vibrio

4. Name any five useful bacteria and its role in our lives.

Lactobacillus – Convert milk to yoghurt.

Acetobacter – For making vinegar ,wine and fruit juices.

Streptomyces – For making antibiotics such as streptomycin and tetracycline.

Escherichia coli – Found in the instestines of human and aid in digestion. It also produce vitamins B and K.

WORK SHEET- 2 KINGDOM PROTISTA- ANSWER KEY

1. Name the Protista given below and label the parts.

A – Food vacuole, B – Cytoplasm, C – Pseudopodia, D - Nucleus

2. i) What does the diagram given below depicts?

Answer : Nutrition and feeding in amoeba.

ii) Name the structure which helps in the above process mentioned in (i)

Answer: Food vacuole

3. i) Identify the diagram given below and write what does it depicts?

Answer: Multiple fission

ii) Under which condition the above mentioned process takes place?

Answer: During unfavorable conditions

LESSON - 3 CLASSIFICATION OF ANIMALS

I. Short answer questions

1 Define species

Species are group of living organisms consisting of similar individuals capable of exchanging genes or interbreeding.

2. Give two examples each of the following
Vertebrates-Fishes, Lion
Aves-Parrot, Crow
Annelids-Leech, Earth worm
Invertebrates-Sponges, Flatworms

3.What are parasites?
Parasites are the organisms that lives on or in a host and gets its food from or at the expense of its host.

4.What are the various classes into which arthropods are divided give an example for each of them.

Arthropods are divided into 4 classes
Crustaceans - Crabs
Myriapoda– Centipede
Insecta-Lady bug
Arachnida-Spider

5. Define invertebrates also name the various groups into which these animals are divided.

Invertebrates are animals that don't have a backbone.
They are further divided into different groups. porifera, coelenterate, platyhelminthes, Aschelminthes, annelid, arthropoda, mollusca and echinodermata.

6. On the basis of what characteristic features are animals can be divided into vertebrates and invertebrates.

The animals have been divided into two groups based on the presence or absence of a backbone. The backbone is the observable feature that defines whether the animal is a vertebrate oran invertebrate.

7.Distinguish between

a)Hydra and tape worm

Hydra	Tape worm
i) Hydra is an invertebrate, hollow sac – like animal which belongs to Coelenterata	Tapeworm is an invertebrate, flatworm, which belongs to Platyhelminthes.

b) Insecta and myriapoda

Insecta	Myriapoda
Insecta is a type of arthropod, whose body is divided in to head, thorax and abdomen. They have antennae and three pairs of jointed legs.	Myriapoda is a type of arthropod , which has segmented body where each has one or two pairs of legs.
Ex. Ladybug, cockroach	Ex. Centipede ,millepedes

c)Aves and pisces

Aves	Pisces
Aves are the class of vertebrates with feathers.	Pisces are the class of vertebrates and are called aquatic animals.
Their body is covered with feathers and wings adapted for flying .	Their body is covered with scales and they also have fins.
Their jaws are modified in to beaks.	Pisces are cold blooded animals.

d)Leech and sponge

Leech	Sponge
Leech belongs to annelida.	Sponge belongs to poriefera.
Their body is soft and segmented forming rings.	They are pore bearing animals ,mostly found in sea.

e) Frog and tortoise

Frog	Tortoise
Frog is a cold blooded animal belongs to class amphibia.	Tortoise belongs class reptilia.
They are adapted to live on land as well as water.	They are mostly terrestrial creeping and crawling .Some live in water too

f) Pearl oyster and starfish

Pearl oyster	Starfish
Pearl oyster is a mollusca,which is soft bodied shelled animal.	Starfish is an Echinodermata, which is a spiny skinned animal.
They do not have appendages.	They are mainly marine and their body is rough, spiny and radially symmetrical.
They have muscular foot for movement.	They move with the help of tube feet.

II. Challenge question

1. Name an organism which has a characteristic of both plants and animals.

Answer: Euglena is an organism which has characteristics of both plants and animals.

2. Discuss, how different animals have adapted in their environment.

Animals depend on their physical features to help them obtain food, keep safe, build homes, withstand weather, and attract mates. These physical features are called physical adaptations. They make it possible for the animal to live in a particular place and in a particular way. Each adaptation has been produced by evolution. This means that the adaptations have developed over many generations.

WORK SHEET: 1 ARTHROPODS (ANSWER KEY)

The following animals are arthropods:

1. Identify and name the animals A, B, C and D.

Answer: A- Shrimp B – Cockroach C- Millipede D – Spider

2. Name the classes to which these animals belong and write its features.

Answer : A- Crustaceans, B - Insecta, C- Myriapoda, D – Arachnida