MISSION M.B.BS

Date: 20/06/2022

Subject: BOTANY

Topic : BIOLOGICAL CLASSIFICATION - L5

Class: Standard XI

Instructions:

A

1. Which among the following is not a parasitic protozoan?

   ✗ **A.** *Plasmodium vivax*

   ✗ **B.** *Trypanosoma gambiense*

   ✓ **C.** *Amoeba proteus*

   ✗ **D.** *Entamoeba histolytica*

   A parasite is an organism that lives on or inside other organisms (host) and draws nutrition at the expense of its host.

   Amoeba proteus is a free-living organism and capable of independent existence. While *Plasmodium vivax*, *Trypanosoma gambiense* and *Entamoeba histolytica* are parasitic protozoans.

   Plasmodium vivax causes malaria. The causative agent of sleeping sickness is *Trypanosoma gambiense* and of dysentry is *Entamoeba histolytica*.

2. Given below is an assertion and reason.
A. Both assertion and reason are true and reason is the correct explanation
B. Both assertion and reason are true but reason is not the correct explanation
C. Assertion is true, but reason is wrong
D. Both assertion and reason are wrong

Assertion: Euglena has chlorophyll, a feature similar to plants.
Reason: Euglena cannot be classified on the basis of two kingdom classification.

- ✗ **A.** A
- ✓ **B.** B
- ✗ **C.** C
- ✗ **D.** D

Euglena lacks a cell wall, has contractile vacuole, has a flagellum and a light sensitive eyespot. These are animal-like characteristics. *Euglena* has chlorophyll and is a photosynthetic organism. This makes it a plant-like organism. It cannot be classified in the two kingdom classification due to this reason. *Euglena* has been kept under Kingdom Protista in Five Kingdom Classification due to this reason.

3. *Plasmodium* belongs to

- ✗ **A.** amoeboid protozoans
- ✗ **B.** flagellated protozoans
- ✗ **C.** ciliated protozoans
- ✓ **D.** sporozoans

The malarial parasite (*Plasmodium*) belongs to sporozoa under the Kingdom Protista. *Plasmodium* (malarial parasite) causes malaria and has an infectious spore-like stage in their life cycle called sporozoites.

4. Match the columns.

	Column I		Column II
I.	Chrysophytes	A.	*Paramoecium*
II.	Dinoflagellates	B.	*Euglena*
III.	Euglenoids	C.	*Gonyaulax*
IV.	Protozoans	D.	Diatoms

✔ **A.** I-D, II-C, III-B, IV-A

✘ **B.** I-B, II-C, III-A, IV-D

✘ **C.** I-B, II-D, III-C, IV-A

✘ **D.** I-D, II-B, III-C, IV-A

The diatoms belong to the chrysophytes. Chrysophytes include the golden algae, commonly called 'Jewels of Sea'.

Gonyaulax is a dinoflagellate and it causes the 'red tide' phenomenon.

Euglena, belonging to the euglenoids, is considered to be the connecting link between plants and animals as it has characteristics of both.

Paramoecium is a protozoan and is commonly called the 'slipper animalcule' because of its shape.

5. Which one among the following does not belong to Monera?

✔ **A.** Slime molds

✘ **B.** *Mycoplasma*

✘ **C.** Eubacteria

✘ **D.** Archaebacteria

Mycoplasma, eubacteria and archaebacteria are prokaryotes that belong to kingdom Monera.
Slime moulds, also called as the Myxomycetes, belong to Kingdom Protista. They are slimy mass of multi nucleate protoplasm having pseudopodia-like structures for engulfing food.

6. Which of the following is the wrong pair?

A. Spherical bacteria - Coccus

B. Rod shaped bacteria - Bacillus

C. T shaped bacteria -Vibrium

D. Spiral bacteria - Spirillum

Bacteria can be classified on the basis of their shapes. The round (spherical) ones are the cocci, the rod shaped ones are the bacilli, the comma shaped ones are called the vibrio and the spiral shaped ones are called spirilla.

7. Biogas is produced by

A. Eubacteria

B. Archaebacteria

C. Cyanobacteria

D. *Mycoplasma*

Methanogens are a group of anaerobic bacteria belonging to Archaebacteria. They are found in the gut of ruminants and are known to produce methane as an end product of their anaerobic respiration.

The dung of these animals is used in biogas plants for the production of biogas.

Methanogens belong to Archaebacteria and not Eubacteria.

Cyanobacteria help in nitrogen fixation.

Mycoplasma are infectious in nature and do not produce biogas.

8. Which of the following is not correct?

A. Cyanobacteria are photosynthetic prokaryotes

B. Heterocysts are special cells in certain cyanobacteria which function in nitrogen fixation

C. Heterotrophic bacteria are more abundant than autotrophic bacteria

D. Citrus canker is caused by a fungus

Citrus canker is a disease affecting *Citrus* species and is caused by the bacterium *Xanthomonas axonopodis*.

Cyanobacteria are photosynthetic prokaryotes that are capable of performing photosynthesis due to the presence of chlorophyll pigments.

Heterocysts are large, barrel shaped cells found in the filaments of the cyanobacteria which help in nitrogen fixation.

Bacteria exhibit both autotrophic and heterotrophic nutrition. But the number of heterotrophic forms such as parasitic and saprophytic bacteria are predominantly more in all habitats.

9. In Whittaker's five kingdom classification, which kingdom is considered as a 'grab-bag' of unnatural assemblage of organisms?

A. Monera

B. Protista

C. Mycota

D. Animalia

The Kingdom Protista is called 'grab bag' kingdom because it is such a diverse kingdom and one can get many different unicellular eukaryotic organisms that do not fit into any of the other kingdoms. The organisms in Kingdom Protista are either plant like, animal like, or fungus like.

10. What is the common feature of *Gonyaulax*, *Euglena*, *Amoeba* and *Pinnularia*?

✗ **A.** They show holozoic nutrition

✗ **B.** They show autotrophic nutrition

✗ **C.** They are unicellular and prokaryotic

✓ **D.** They are unicellular and eukaryotic

Kingdom Protista includes all the unicellular eukaryotes. They are predominantly aquatic organisms with most of them being marine. They include both autotrophs as well as heterotrophs. *Gonyaulax*, *Euglena*, *Amoeba* and *Pinnularia* all belong to the kingdom Protista, all are unicellular and eukaryotic organisms. Holozoic nutrition is seen in *Amoeba* and *Euglena*. All the mentioned organisms except *Amoeba* are said to be photosynthetic, so their mode of nutrition is autotrophic.