**Biological Classification Important Questions With Answers**

**NEET Biology 2023**

1. Sex factor in bacteria is _____ .
   a) Chromosomal replicon **b) F-replicon** c) RNA d) Sex-pilus

   **Solution : -**
   Bacterial strains such as of E. coli show sexual differences. Each male cell possesses a sex factor or fertility factor called F-factor. Infact, it is a small circular piece of DNA, self-replicating like bacterial chromosome but only 1/100 in size. The F-factor codes for the protein of a special type of pilus, the sex pilus which enables cell to cell contact and transfer of genetic material through a conjugation tube.

2. Red tides in warm coastal water develop due to the abundance of
   **a) dinoflagellates** b) euglenoids c) diatoms and desmids d) slime moulds.

3. The multinucleate slimy mass of protoplasm which forms the body of slime moulds is called as
   **a) plasmodium** b) myxamoeba c) sporocytes d) periplasmodium.

4. Which of the following secretes toxins during storage conditions of crop plants?
   **a) Aspergillus** b) Penicillium c) Fusarium d) Colletotrichum

   **Solution : -**
   During storage condition of crop plant, Aspergillus flavus produces carcinogenic fungus toxin (Aflatoxin)

5. Causal organisms of sleeping sickness and kala-azar belong to which of the following groups of protozoan protists?
   a) Amoeboid protozoans **b) Flagellated protozoans** c) Ciliated protozoans d) Sporozoans

   **Solution : -**
   **Trypanosoma gambiense,** causes Gambian sleeping sickness. The parasite is transmitted by blood sucking tse-tse fly, **Glossina palpalis. Leishmania donovani** causes kala-azar or dum-dum fever (= visceral leishmaniasis). The parasite is transmitted by sandfly, **Phlebotomus argentipes** and other species. Causal organisms of both diseases belong to flagellated protozoans of Kingdom Protista.

6. Which of the following is a mismatched pair of protozoan group and its example?
   a) Amoeboid protozoan - Entamoeba histolytica b) Flagellated protozoan - Giardia intestinalis
   c) Ciliated protozoan - Paramecium caudatum **d) Sporozoan - Leishmania donovani**

   **Solution : -**
   Leishmania donovani is a flagellated protozoan

7. Lichens are a well known combination of an alga and a fungus where fungus has _____ .
   a) A saprophytic relationship with the alga. b) An epiphytic relationship with the alga.
   c) A parasitic relationship with the alga. **d) A symbiotic relationship with the alga.**

   **Solution : -**
   A saprophyte is an organism feeding on dead, decaying organic matter. Epiphyte is a plant growing over another plant. Parasites live inside their host.

8. Who crystallised and isolated viruses for the first time?

**a) W.M. Stanley** b) K.M. Smith c) D. Ivanowski d) F.C.Bawden

9. a. Asexual spores generally absent
   b. Vegetative reproduction commonly by fragmentation
   c. Sex organs absent but sexual reproduction present
   d. Used extensively in genetic and biochemical
   e. Site of karyogamy and meiosis in asus
   f. Basidium produces endogenous sexual spores
   g. Morels and truffles are edible members
   Out of these given features, which ones are associated with basidiomycetes?
   a) a, c and f **b) a, b and c** c) c, d and f d) f and g only
10. _____bacteria oxidise various inorganic substances such as nitrates, nitrites and ammonia and use the released energy for ATP production. They play an important role in recycling of nutrients (N, P, Fe, S etc.).
    a) Photosynthetic autotrophic **b) Chemosynthetic autotrophic** c) Parasitic d) Saprophytic

    **Solution : -**
    Chemoautotrophic bacteria or chemosynthetic autotrophic bacteria are able to manufacture their organic food from inorganic raw materials with the help of energy derived from exergonic chemical reactions involving oxidation of an inorganic substance present in the external medium.
11. Which of the following shows coiled RNA strand and capsomeres?
    a) Polio virus **b) Tobacco mosaic virus** c) Measles virus d) Retrovirus

    **Solution : -**
    Fact
12. Select the incorrect match.
    **a) Morels and truffles - Phycomycetes** b) Puffballs and toad stools - Basidiomycetes
    c) Early blight of potato - Alternaria solani d) Late blight of potato - Phytophthora infestans

    **Solution : -**
    Morels are Ascomycetes with edible ascocarps that have fleshy sponge-like conical cap or pileus and a stalk like stipe, **e.g., Morchella esculenta** (vern. Gucchi), **M. crassipes, M. deliciosia.** Truffles are edible Ascomycetes with tuber-like subterranean ascocarps that are often dug out with the help of trained dogs and pigs, **e.g., Tuber uncinatum, T.aestivum**.
13. Contagium vivum fluidum was proposed by
    a) D. J. Ivanowsky **b) M. W. Beijerinck** c) Stanley d) Robert Hooke.

    **Solution : -**
    Martinus William Beijernick (a Dutch microbiologist and botanist) gave a phrase, **"Contagium vivum fluidum" (Latin:** "Contagious living fluid"), to describe a virus. He underlined its (virus's) ability to slip through the finest mesh filters then available, giving it almost liquid properties.
14. What is wrong about mycoplasma?
    a) They are called PPLO b) They are pleomorphic **c) They are sensitive to penicillin**
    d) They produce diseases in plants

    **Solution : -**
    Fact.
15. _____are important decomposers that cause decay and decomposition of dead bodies of plants and animals.
    a) Saprophytic bacteria b) Saprotrophic fungi c) Plants, like Sarracenia **d) Both (a) and (b)**

    **Solution : -**

Saprophytic bacteria are free living bacteria which obtain their food from organic remains, e.g., corpses, animal excreta, fallen leaves, vegetables, fruits, meat, jams, jellies, bread and other products of plant and animal origin. Aerobic breakdown of organic compounds is known as decay. In nature saprophytic bacteria along with saprotrophic fungi are the decomposers of organic remains.

16. Read the following statements regarding methanogens and select the correct option.
(i) They are included in the group Archaebacteria.
(ii) They are responsible for the production of biogas in gobar gas plants.
(iii) They live in hot sulphur springs.
(iv) They are strictly anaerobic.
**a) Statements (i) and (ii) are correct** b) Statements (i), (ii) and (iv) are correct
c) Statements (ii), (iii) and (iv) are correct d) All statements are correct.

17. In five kingdom classification, Chlamydomonas and Chlorella have been included in :
**a) Protista** b) Monera c) Plantae d) Algae

**Solution : -**
Fact

18. Members of Phycomycetes are found in
(i) aquatic habitats
(ii) on decaying wood
(iii) moist and damp places
(iv) as obligate parasites on plants.
Choose from the following options.
a) None of the above b) (i) and (iv) c) (ii) and (iii) **d) All of the above**

**Solution : -**
Phycomycetes are the group of fungi characterised by aseptate and coenocytic mycelium. They can live in a wide variety of habitat. They can be aquatic, saprotrophic, parasitic or could be living in moist and damp places. Some examples of phycomycetes are **Rhizopus** (black bread mould), **Mucor** (dung mould), **Albugo** (parasitic).

19. Plasmodium, the malarial parasite, belongs to class _____ .
a) Sarcodina b) Ciliata **c) Sporozoa** d) Dinophyceae

**Solution : -**
Plasmodium, the malarial parasite belongs to class-Sporozoa. Sporozoans are intracellular parasites, reproduce by multiple fission and life cycle may include the two different hosts.

20. The sporozoa are all internal _____ that typically have an infective cyst stage in their life cycle. An example of sporozoa is the genus _____which causes malaria.
a) ciliates, Plasmodium b) flagellates, Plasmodium **c) parasites, Plasmodium**
d) parasites, Trypanosoma

**Solution : -**
All sporozoans are endoparasites.Sexual reproduction takes place through syngamy. Asexual reproduction occurs through multiple fission. Under unfavourable conditions, they form cysts. Examples - Plasmodium (the malarial parasite), Monocystis, etc.

21. Ergot of rye is caused by a species of _____ .
a) Uncimula b) Ustilago **c) Claviceps** d) Phytophthora.

**Solution : -**
Ergot of Rye is a plant disease that is caused by the fungus Claviceps purpurea. Claviceps purpurea decreases the yield of rye plant.

22. **Assertion:** Virus is an obligate parasite.
**Reason:** Virus is host specific.

a) If both assertion and reason are true and reason is the correct explanation of assertion.
**b) If both assertion and reason are true but reason is not the correct explanation of assertion.**
c) If assertion is true but reason is false. d) If both assertion and reason are false.

**Solution : -**

Virus is an obligate parasite. It is inert outside the host cell. A virus does not grow, divide or reproduce like typical organisms. Instead it multiplies by independent formation of its parts using host machinery and then assembly of parts to produce virus particles. Viruses are host specific.

23. Dikaryophase is a specific characteristic of
a) all Fungi b) Phycomycetes and Ascomycetes c) Basidiomycetes and Deuteromycetes
**d) Ascomycetes and Basidiomycetes.**

**Solution : -**

In Ascomycetes and Basidiomycetes, there occurs an intervening phase called dikaryophase, between plasmogamy and karyogamy. In this phase, the cells often contain two nuclei or dikaryons (n + n). Such cells are called dikaryotic cells.

24. Which among the following is not a prokaryote?
a) Nostoc b) Mycobacterium **c) Saccharomyces** d) Oscillatoria.

**Solution : -**

Saccharomyces i.e., yeast is an eukaryote. Mycobacterium is a bacterium. Oscillatoria and Nostoc are cyanobacteria.

25. Cyanobacteria are classified under which of the following kingdoms?
**a) Monera** b) Protista c) Algae d) Plantae

26. Tobacco mosaic virus is a tubular filament of size _____ .
a) 700 x 30 nm b) 300 x 10 nm c) 300 x 5 nm **d) 300 x 20 nm**

**Solution : -**

Tobacco mosaic virus is 300 nm long and 20 nm in diameter.

27. **Assertion:** Deuteromycetes is known as fungi imperfect.
**Reason:** In Deuteromycetes, only the asexual phase is known.
**a) If both assertion and reason are true and reason is the correct explanation of assertion.**
b) If both assertion and reason are true but reason is not the correct explanation of assertion.
c) If assertion is true but reason is false. d) If both assertion and reason are false.

**Solution : -**

Deuteromycetes are commonly known as imperfect fungi because only the asexual or vegetative phases of these fungi are known and perfect or sexual stage is either absent or not known.

28. Absorptive heterotrophic nutrition is exhibited by _____ .
a) Algae **b) Fungi** c) Bryophytes d) Pteridophytes

**Solution : -**

Fungi are heterotrophic, e.g. these require an organic source of carbon, also require some source of nitrogen, inorganic ions (K+, Mg+), trace elements (Fe, Zn, Cu) and growth factors like vitamins' Fungi may act as saprobes and parasites. They obtain nutrition from host by means of special structures called haustoria and exhibit absorptive or holophytic type of nutrition.

29. Select the pair that consists of viral diseases
**a) Mumps and small pox** b) Herpes and influenza c) Pneumonia and syphilis d) Both (a) and (b)

**Solution : -**

In humans, viruses cause diseases like measles, smallpox, mumps, poliomyelitis, rabies, hepatitis, dengue, encephalitis, AIDS, common cold, flu, herpes, SARS (severe acute respiratory syndrome), bird flu ($H_5NI$), Swine flu (H1N1), etc.

30. Pick up the wrong statement.
**a) Nuclear numbrane is present is Monera** b) Cell wall is absent in Animalia
c) Protista have photosynthetic and heterotrophic modes of nutrition d) Some fungi are edible.

**Solution : -**
All monerans are unicellular; They lack true nuclei and generally lack membrane-bound organelles.

31. How many organisms in the list given below are autotrophs?
Lactobacillus, Nostoc, Chara, Nitrosomonas, Nitrobacter, Streptomyces, Sacharomyces, Trypansoma, Porphyrs, Wolfia
a) Four b) Five **c) Six** d) Three

32. Amoebiasis is prevented by _____ .
a) Eating balanced food b) Eating plenty of fruits **c) Drinking boiled water** d) Using mosquito nets

**Solution : -**
Amoebiasis or amoebic dysentery is caused by protozoan parasite Entamoeba histolytica that resides in the upper part of large intestine. It spreads through contaminated water and food containing adult form (trophozoite) or cyst of Entamoeba. Trophozoite damages intestinal wall by enzyme histolysin, reaches blood capillaries and feed on RBCs, bacteria, tissue debris, resulting in abdominal pain, acidic motions with mucus and blood. The disease can be prevented by drinking boiled and clean water and intake of fresh and hygienic food.

33. Which of the following combinations of characters is true for slime moulds?
a) Parasitic, plasmodium without walls, spores dispersed by air currents
b) Saprophytic, plasmodium with walls, spores dispersed by water
c) Parasitic, plasmodium without walls, spores dispersed by water
**d) Saprophytic, plasmodium without walls, spores dispersed by air currents**

**Solution : -**
Slime moulds are saprophytic protists having plasmodium as a free-living thalloid body. Plasmodium is wall less mass of multinucleate protoplasm covered by slime. During unfavourable conditions, the plasmodium differentiates and forms fruiting bodies bearing spores at their tips. These spores are dispersed by air currents.

34. Fungi show a sexual reproduction by all of the following kinds of spores except.
a) conidia **b) oospores** c) sporangiospore d) zoospores.

**Solution : -**
Asexual reproduction in fungi occurs through the formation of spores. Spores are single-celled propagules which separate from the parent organism and can get dispersed., e.g., zoospores, sporangiospores, chlamydospores, oidia, conidia, etc. Oospore is the product of sexual reproduction.

35. Excretion in Amoeba occurs through _____ .
a) Lobopodia b) Uroid Portion c) Plasma membrane **d) Contractile vacuole**

**Solution : -**
Endoplasm of Amoeba in the posterior part contains a single clear rounded and pulsating contractile vacuole. Contractile vacuole is analogous to uriniferous tubules of fog, it functions in excretion and osmoregulation.

36. A dikaryon is formed when
a) meiosis is arrested b) the two haploid cells do not fuse immediately c) cytoplasm does not fuse
**d) none of the above**

37. Which pair of the following belongs to Basidiomycetes?
a) Puffballs and Claviceps b) Peziza and stink borns c) Morchella and mushrooms
**d) Birds nest fungi and puffballs.**

**Solution : -**

Birds nest fungi and puffballs belongs to Basidiomycetes. They produce their basidia and basidiospores on or in a basidiocarp. Some examples of Basidiomycetes are smut, rusts, the mushrooms, the toad stools, the puff balls and the pore fungi.

38. Bacteria lack alternation of generation because there is _____ .

**a) Neither syngapy nor reduction division** b) Distinct chromosomes are absent c) No conjugation d) No exchange of genetic material

**Solution : -**

(i) Bacteria reproduces asexually by transverse binary fission, conidia, budding, cyst and sporulation. No true sexual reproduction (involving formation of gametes, their fusion and meiosis) is known to occur in bacteria'
(ii) However, in bacteria the transfer of genetic material from donor to recipient cell to bring genetic recombinations/variations is reported that occurs not through gametes/sex cells, but by other methods like conjugation, transduction and transformation. It does not result in any multiplication of cells.

39. The term algae is applied to the cyanobacteria on the basic of

a) Cell wall b) Photosynthetic activity **c) Flagella** d) Sexual reproduction

40. African sleeping sickness is due to _____ .

a) Plasmodium vivax transmitted by tse-tse fly b) Trypanosoma lewsii transmitted by bed bug
**c) Trypanosoma gambiense transmitted by Glossina palpalis**
d) Entamoeba gingivalis spread by house fly

**Solution : -**

The disease African sleeping sickness is caused by Trypanosoma gambiense and this is transmitted by tsetse fly (Glossina palpalis).

41. Entamoeba coli causes _____ .

a) Pyorrhoea b) Diarrhoea c) Dysentery **d) None of these**

**Solution : -**

Entamoeba coli is the common parasitic genera of phylum Protozoa. It harbours the upper part of large intestine (colon) and very often in the liver, brain, and testes and causes constipation

42. Which of the following statements is correct regarding sexual reproduction in Basidiomycetes?

a) Plasmogamy occurs by the fusion of two somatic cells of different strains.
b) Karyogamy and meiosis occur in the basidium producing four basidiospores
c) Basidiospores are exogenously produced on the basidium. **d) All of these**

43. Flaggellation in Euglena is

a) Uniflagellation b) Isokont and whiplash type c) Heterokont and whiplash type
**d) Heterokont and stichonematic**

44. **Assertion:** Mycoplasmas are pathogenic in animals and plants.
**Reason:** Mycoplasmas lack cell wall and can survive without oxygen.
a) If both assertion and reason are true and reason is the correct explanation of assertion.
**b) If both assertion and reason are true but reason is not the correct explanation of assertion.**
c) If assertion is true but reason is false. d) If both assertion and reason are false.

45. Who discovered Plasmodiurn in RBCs of human beings?

a) Ronald Ross b) Mendel **c) Laveran** d) Stephen

**Solution : -**

In 1880, Charles Laveran discovered Plasmodium, the causative agent of malaria in RBCs of human beings. In 1897, Ronald Ross discovered oocytes of Plasmodium in the stomach of mosquito.

46. In an experiment common Tobacco Mosaic Virus (TMV) and its mutant strain 'HR' were used to prepare hybrid particles with 'HR' nucleic acid and 'TMV' protein coat. These hybrids were mixed with antibodies against 'HR' strains. If this mixture is applied to plant materials, it will result in
    a) loss of infectivity of virus particles due to inactivation of nucleic acids
    b) loss of infectivity due to inactivation of protein coat **c) intact infectivity because only coat is neutralised**
    d) unchanged infectivity because neither nucleic acid nor protein coat is neutralised.

47. **Assertion:** Euglena is called as plant animal.
    **Reason:** Pellicle of Euglena is made up of cellulose and not protein.
    a) If both assertion and reason are true and reason is the correct explanation of assertion.
    b) If both assertion and reason are true but reason is not the correct explanation of assertion.
    **c) If assertion is true but reason is false.** d) If both assertion and reason are false.

    **Solution : -**
    Euglena is studied as plant as well as animal. It is called plant animal. Plant characters of Euglena are presence of chloroplasts with chlorophyll and holophytic (photosynthetic) nutrition in presence of light. Animal characters of Euglena are presence of pellicle which is made up of proteins and not of cellulose, presence of stigma and paraflagellar body (photosensitive structures), presence of contractile vacuole (not found in plants) and presence of longitudinal binary fission.

48. In the five-kingdom system of classification. which single kingdom out of the following can include blue green algae, nitrogen-fixing bacteria and methanogenic archaebacteria?
    a) Fungi b) Plantae c) Protista **d) Monera**

    **Solution : -**
    Monera is the prokaryotic kingdom that comprises bacteria, blue green algae (cyanobacteria) and archaebacteria. Protista includes slime, unicellular and colonial eukaryotes. The significant members are diatoms, dinoflagellates, euglenoids, moulds and protozoans. Fungi is the kingdom of multicellular or multinucleate heterophyllous and spore producing eukaryotic organisms like Rhizopus mildews, mushroom etc., Kingdom plantae includes all coloured multicellular photosynthetic organisms (plants).

49. Read the following statements and select the correct option.
    Statement 1 : Euglena can be considered as a plant due to the presence of chlorophyll.
    Statement 2 : Euglena cannot be classified on the basis of two kingdom system of classification.
    **a) Both statements 1 and 2 are correct** b) Statement 1 is correct but statement 2 is incorrect
    c) Statement 1 is incorrect but statement 2 is correct. d) Both statements 1 and 2 are incorrect

50. Which of the following organisms possesses characteristics of both a plant and an animal?
    a) Bacteria b) Mycoplasma **c) Euglena** d) Paramecium

    **Solution : -**
    Euglena is a connecting link between animals and plants. Euglena contains chlorophyll, yet it resembles animals, because it feeds like animals in the absence of sunlight. It resembles the ancestral form from which the plants and animals evolved.