Speed Test-60

1. **(b)** **2.** **(d)**
3. **(c)** Cyanobacteria, chlorophyll a, PS I and II.
4. **(d)**
5. **(c)** Vegetative phase-animal-like and reproductive phase- plant-like.
6. **(c)** Desmids i.e golden algae belongs to group chrysophytes. These are found in freshwater as well as marine environment.
7. **(a)**
8. **(c)** T_2 phage consists of linear ds DNA.
9. **(b)** Cell wall is absent in Mycoplasma.
10. **(d)** Non-motile spores, saprophytic protists.
11. **(c)** Eubacteria can be differentiated from archaebacteria and bacteria on the basis of cell wall. Eubacteria possess true cell wall, made up of NAM and NAG i.e. N-acetyl muramic acid and N-acetyl glucoseamine. Cell wall of archaebacteria is made up of N-acetyl talosaminuric acid.
12. **(d)** Pathogen of cholera is *Vibrio cholerae* bacterium. Cholera is transmitted by contaminated water. Typhoid or enteric fever spreads through contaminated water in which bacterium *Salmonella typhi* is present. Citrus canker and crown gall are bacterial disease of plants caused by *Xanthomonas citri* and *Agrobacterium tumefaciens* respectively.
13. **(a)** Cyanobacteria or blue-green algae are Gram + photosynthetic prokaryotes which perform oxygenic photosynthesis. Photosynthetic pigments include chlorophyll *a*, carotenoids and phycobilins. Cyanobacteria are classified under kingdom Monera. Cyanobacterial cell structure is typically prokaryotic – one envelope organisation with peptidogolycan wall, naked DNA, 70S ribosomes and absence of membrane bound structure like endoplasmic reticulum, mitochondria, golgi bodies, plastids, lysosomes, sap vacuoles. The outer part of the protoplast, called chromoplasm, contains a number of photosynthetic thylakoids.
14. **(d)** Saprophytic bacteria are free living bacteria which obtain their food from organic remains, plant and animal origin. Aerobic breakdown of organic compounds is known as decay. In nature saprophytic bacteria alongwith saprotrophic fungi are the decomposers of organic remains.
15. **(a)** Diatoms are very important photosynthesizers. About half of all the organic matter synthesized in the world is believed to be produced by them. Diatoms are probably the most numerous of all plants like protists. Because of this abundance, they are one of the most important primary producers of the sea. There are about 5,500 species of diatoms, mainly marine. The diatoms constitute an important phytoplankton component of the oceans.
16. **(c)** Fungi is a large kingdom of over 100,000 species. They are achlorophyllous, heterotrophic, spore-forming, non-vascular, eukaryotic organisms which often contain chitin or fungal cellulose in their walls and possess glycogen as food reserve. They are cosmopolitan in occurrence being present in air, water, soil, over and inside animals and plants.
7. **(d)** Virus is an obligate parasite and is inert outside the host cell. An inert virus outside host is called virion.
8. **(d)** Monera is the kingdom of all prokaryotes and includes bacteria, blue green algae (cyanobacteria) and archae- bacteria-a group of ancient bacteria kingdom. Protista includes slime unicellular and colonial eukaryotes. The important members are diatoms, dinoflagellates, euglenoids, alone moulds and protozoans. Fungi 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).
19. **(c)** Viruses that get integrated with the bacterial host genome are called Lysogenic. Lysozymes are present in the saliva and are antibacterial agents. Lipolytic enzymes are the enzymes which catalyse breakdown (lysis) of fats (Lipids).
20. **(a)** Phenetic classification is purely based on appearances. Phylogenetic classifiaction is based on ancestral lineage. Karyotaxonomy is based on DNA characteristics. Morphotaxonomy involves morphological characters.
21. **(d)** Biological classification is the scientific arrangement of organisms in a hierarchical series of groups and subgroups on the basis of similarities and differences in their traits. It helps in building evolutionary pathways and in identifying new organisms.
22. **(c)** Artificial system of classification is based on comparison of on or a few characters. Phylogenetic system of classification indicates the evolutionary or phylogenetic relationship of organisms.
23. **(b)** The five kingdom classification is a mode of classification based on the following criteria.
– Complexity of cell structure
– Complexity of body structure
– Modes of nutrition
– Ecological life styles
– Phylogenetic relationship
24. **(c)** Phylogenetic system of classification is a system indicating the evolutionary or phylogenetic relationship of organisms.
25. **(a)** Bacteria are prokaryotes which are grouped under Monera. Protista is a kingdom of unicellular eukaryotes. Fungi is a kingdom of multicellular spore-producing eukaryotes. Plantae are photosynthetic eukaryotes.
26. **(a)** Retroviruses have RNA as the genetic material and hence they exhibit reverse transcription whereby DNA is synthesized on RNA template. They have reverse transcriptase as the enzyme.

27. **(b)** Four criteria are : (i) complexity of cell, (ii) complexity of organism, (iii) mode of nutrition and (iv) major ecological role

28. **(b)** First phylogenetic classification was given by Eichler but that was partially phylogenetic and first true phylogenetic classification was given by Engler and Prantl.

29. **(a)** *Taenia*, commonly known as tapeworm is not a protist, it belongs to phylum Platyhelminthes (Kingdom Animalia)

30. **(c)**

31. **(b)** Physiological characters

32. **(c)** During the origin of life, the first organisms evolved were chemoheterotrophs. They obtained the organic material from outside which they utilized in energy production and synthesis of their own organic material.

33. **(d)** Bacteria posses various forms and shapes and are of 4 different types - coccus (round), bacillus (rod shaped), vibrio (comma shaped) and spirillum (spiral like cork screw).

34. **(c)** Slime moulds in the division of myxomycota have spores that develop into flagellated gametes.

35. **(b)** While working at the Rockefeller Institute, Brown reported isolation of a PPLO from human arthritic joint tissue in 1938. In discussing the significance of this observation, Brown reported successful treatment of arthritic patients in 1949 with a new antibiotic called aureomycin.

36. **(c)**

37. **(c)** *Saccharomyces cervisiae* is a yeast used in making bread (Baker's yeast) and commercial production of ethanol. *Paramecium* & *Plasmodium* are of animal kingdom while *Pencillium* is a fungi. Lichen is composite organism formed from the symbiotic association of an algae and a fungus. *Nostoc* & *Anabaena* are examples of kingdom monera.

38. **(a)** **39.** **(a)** **40.** **(b)** **41.** **(b)** **42.** **(a)**

43. **(a)**

44. **(b)** The correct labeling in the figures of bacterial cell and *Nostoc* are - A- cell wall, B - cell membranes, C - DNA, D- heterocysts, E - mucilaginous sheath.

45. **(a)** A - Cocci (spherical), B - Bacilli (rod shaped), C - Spirilla (spiral), D - Vibrio (comma shaped). These are all the shapes of the bacteria.