

Biological Classification



TRY YOURSELF

ANSWERS

- R.H. Whittaker (1969) proposed the five kingdom classification. The main criteria for classification of organisms are :
(i) Complexity of cell structure, (ii) Body organisation, (iii) Mode of nutrition, (iv) Nature of cell wall and (v) Phylogenetic relationships.
- According to four Kingdom classification, Kingdom Monera have all prokaryotes like bacteria, blue green algae, etc. These are unicellular and non-nucleated.
- (i) *Clostridium tetani*
(ii) *Corynebacterium diphtheriae*
(iii) *Xanthomonas citri*
- Depending upon the mode of respiration and their capability to perform alternate modes of respiration, bacteria are of two types : aerobes and anaerobes. Each is further of two types : facultative and obligate.
Obligate aerobes can respire only aerobically. They generally get killed under anaerobic conditions. Obligate anaerobes can respire only anaerobically. They generally get killed under aerobic conditions. Facultative anaerobes generally respire aerobically but switch over to anaerobic mode of respiration if oxygen becomes deficient. Facultative aerobes respire anaerobically under normal conditions but can respire aerobically when oxygen is available.
- Thermoacidophiles are archaebacteria having dual ability to tolerate high temperature as well as high acidity, e.g., *Thermoplasma*, *Thermoproteus*.
- Cyanobacteria are the most self sustained photosynthetic organisms. They can, therefore, live under every type of environment and on every type of substrate. Because of this fact, they are one of the earliest colonizers of barren areas.
- Diatoms and desmids (golden algae)
- Gonyaulax* and *Gymnodinium*
- Slime moulds
- (i) Slime moulds cause the decay and decomposition of organic matter in soil.
(ii) They creep over the ornamental plants and make them look ugly.
(iii) Their attractive colours are of artistic value.
- Candida albicans* is dimorphic, i.e., it exists both in single-celled and multicellular hyphal state.
- (a) *Agaricus bisporus*
(b) *Penicillium chrysogenum*
(c) *Saccharomyces cerevisiae*
(d) *Colletotrichum falcatum*
- Two viral diseases of plants and their casual agents are as follows:

S. No.	Name of the disease	Causal agent
(i)	Potato leaf roll	Potato leaf roll virus
(ii)	Tobacco mosaic	TMV
- (a) Viruses are called obligate intracellular parasites because they do not have a metabolic machinery of their own and hence they cannot live outside a host cell.
(b) Coliphage MS 2 has single stranded DNA as genetic material.
- Lichens growing on rocks secrete organic acids like oxalic acid. The acids enter the rock and produce a number of small crevices. Dust and organic matter collect in the crevices. Spores are able to grow over such crevices and start the process of succession and soil formation.

