

**Topic :- Microbes In Human Welfare**

- 1 **(a)**  
*Nostoc* is nitrogen fixing cyanobacteria. It contains a special cell called heterocyst, which has the capacity to fix the atmospheric nitrogen.
- 2 **(d)**  
Antibiotics are used as medicines for the treatment of a number of pathogenic or infectious diseases. It is because of antibiotics and their newer more potent forms a number of formidable diseases are now curable, e.g., plaque, typhoid, tuberculosis, whooping cough, diphtheria, leprosy, etc.
- 3 **(a)**  
The scientific name of zebu cattle is *Bos indicus*, buffalo is *Bubalus bubalus*, silk worm is *Bombyx mori* and domestic fowl is *Gallus domesticus*.
- 4 **(b)**  
Reserpine is obtained from the root's bark of a plant *Rauwolfia serpentina* (sarpagandha) which belongs to the family Apocynaceae.
- 5 **(b)**  
Prion is a microscopic protein particle similar to a virus but lacking nucleic acid, thought to be the infectious agent responsible for **scrapie** and certain other degenerative diseases of the nervous system.
- 6 **(c)**  
Biochemical Oxygen Demand (BOD) in a river water increases when sewage gets mixed with river water.  
Whenever untreated sewage is disposed into natural waters such as streams, ponds, lakes, etc., the normal amount of dissolved oxygen, present in water, gets quickly utilized by microorganisms.

The oxygen demand for oxidation of organic matter present in swage is increased'. This, high value of BOD means the water is highly polluted by organic matter

7 (c)

Autopolyploids are those polyploids, which have the same basic set of chromosome, multiplied like autotriploid (AAA), autotetraploid (AAAA), etc. They show more yield and better adaptation.

9 (a)

In cryopreservation, plants materials are frozen at -196°C.

10 (a)

Activated sludge should have the ability to settle quickly so that it can be rapidly pumped back from sedimentation to aeration tank

11 (c)

*Mycorrhiza* and *Rhizobium* both are shows symbiotic association.

In the Mycorrhizal association fungi surround the root hairs of plants. This increases the surface area of the root hairs and allows it to better absorb nutrients in the soil. It also provides the plant roots with protection. In exchange the fungi attached to the root hairs gets glucose from the plant

The other type of root symbiosis is *Rhizobium* symbiosis. This type of symbiosis occurs in legumes. Here, nodules containing the bacteria *Rhizobium* attach themselves to root hairs of the legume. The *Rhizobium* absorbs and converts unusable nitrogen in the soil, to biologically usable nitrogen, which is then used by the legume. The root of the legume supplies the *Rhizobium* with glucose obtained photosynthetic parts of the plant

12 (d)

*Leucaena leucocephala* (subabul) is a fast growing leguminous tree, native to Central America. The tree produces nutritive forage and is used for revegetating deforested tropical lands.

13 (a)

**Lysine** is an essential amino acid found in wheat.

- 14 **(a)**  
*Bacillus thuringiensis* is a bacterium used to produce genetically engineered *Bt* cotton.
- 15 **(a)**  
 Glomus is a genus of Arbuscular Mycorrhiza (AM) fungi. It helps in nutrient uptake mainly the absorption of phosphorus.
- 16 **(a)**  
 Biogas is used as fuel for heating cooking and lighting Slurry remained after the production of biogas can be used as fertilisers
- 17 **(d)**  
 Opium (apheem) is obtained from latex of unripe capsules of *Papaver somniferum*.
- 18 **(c)**  
 The seeds of (*Ricinus communis*) *Cocos nucifera*, *Zea mays* and other cereals are albuminous or endospermic (seeds with endosperm), where endosperm acts as the food storage tissue of a seed.  
 So, the part of castor (*Ricinus communis*) seed that yields oil (food material) is endosperm.
- 19 **(c)**  
**New castle disease** or **Ranikhet disease** is a very dangerous viral disease of poultry which is caused by a filter passing virus.
- 20 **(d)**  
 Ranikhet disease is a common viral disease in poultry. Foot and mouth disease is a common viral disease in cattles. Anthrax is also found in cattles. Pebrine is a protozoan disease of **silkworm**.

ANSWER-KEY										
Q.	1	2	3	4	5	6	7	8	9	10
A.	A	D	A	B	B	C	C	C	A	A
Q.	11	12	13	14	15	16	17	18	19	20
A.	C	D	A	A	A	A	D	C	C	D