

# MBT

2 marks :

## 1. Biotechnology :

⇒ Biotechnology is a broad area of biology involving the use of living system and organism to develop or make products.

⇒ It's an application of Scientific & Engineering principles. to processing the material by biological growth of agents to provide goods & services.

## 2. Microbial Biotechnology :

⇒ Microbial Biotechnology as industrial microbiology is the use of microorganism to obtain an economically valuable products or activity a commercially valuable product or activity at a commercial or large scale.

## 3. Antibiotics :

⇒ Antibiotics are medicines that help stop infections caused by bacteria. they do this by killing the bacteria or by keeping them from copying themselves or reproducing. Antibiotic means "against life".

## Edible vaccines :

⇒ The word edible vaccines was first used by Charles Arntzen in 1990 & refers to any foods. Typically plants, the produce vitamins, proteins or other nourishment that can act as a vaccine against a certain diseases.

## 5. Monoclonal Antibodies :

⇒ Monoclonal antibodies are laboratory produced molecules engineered to serve as substitute antibodies that can restore enhance or mimic the immune system attack on cancer cells.

## 6. Biofertilizer :

⇒ Bio-fertilizer are the substance that contains microbes which helps in promoting a growth of plants trees by increasing the supply of essential nutrients to the plants.

⇒ It include Mycorrhizal fungi, blue green algae, Rhizobium, Azospirillum, Azotobacter.

## 7. Biopesticides :

⇒ The most commonly used biopesticides are living microorganism, which are pathogenic for the pest of interest.

⇒ It includes biofungicide (*Trichoderma*), bioherbicide (*Phytophthora*) and bioinsecticide (*Bacillus Thuringensis*).

## 8. Bioplastics :

⇒ Bioplastics are plastics made from organic materials such as (corn starch, polyacetic acid (PLA)).

⇒ PHB = polyhydroxy Butyrate

⇒ PHV = polyhydroxy valerate

## 9. Bioremediation :

⇒ Bioremediation is a process used to treat contaminated media, including water, soil and subsurface material by altering environment conditions to stimulate growth of microorganism & degrade & target pollutants.

eg: *Pseudomonas putida*

10. Xenobiotics :

⇒ Xenobiotics is a term used to describe chemical substance that are foreign to animal life and thus includes such examples as plant constituents, drugs, pesticides, cosmetics.

⇒ The body removes xenobiotics by xenobiotic metabolism.

11. SCP :

⇒ Single cell protein or Microbial protein refers to edible unicellular microorganism. The biomass or protein extract from pure or mixed cultured of algae, yeast, fungi or bacteria.

⇒ SCP is a protein source of human foods supplements & animal feeds.

12. Medicinal application of Spirulina :

⇒ Spirulina has several pharmacological activities such as antimicrobial, anticancer, antiviral.

⇒ It develop & utilize either as drug or as functional food.

### 3. Biofuel :

⇒ Biofuel is a type of Renewable energy source derived from microbial, plant or animal materials.

⇒ Biodiesel (from Vegetables oil & liquid animal food or fats). Green diesel derived from algae and other plant sources.

### 14. Microalgae :

⇒ Microalgae are the photosynthetic micro-organism that converts water, sunlight &  $\text{CO}_2$  to algal biomass and also the raw material for biodiesel production.

⇒ They have been recognised as good raw material for biodiesel production.

### 15. Bioethanol :

⇒ Bioethanol is ethyl alcohol used as fuel particularly as an additive for gasoline in motor fuel.

⇒ It's form of renewable energy produced most commonly from biomass such as corn, sugarcane etc.

## 16. Ti-plasmid vector :

⇒ A tumour inducing (Ti) plasmid is a plasmid found in pathogenic species of Agrobacterium, A. tumefaciens, A. vitis.

⇒ The large sized Tumour inducing plasmid found in Agrobacterium tumefaciens.

## 17. Resistance :

⇒ plasmids-mediated resistance is the transfer of antibiotic resistance gene which are carried on plasmids. The plasmids can be transferred between bacteria within the same species or different species.

## 18. Transgenic animals :

Transgenic animals are animals (mice) that have a foreign gene deliberately inserted into their genome. Such animals are commonly created by microinjection of DNA into the pronuclei of a fertilized egg which is subsequently implanted into the oviduct of a pseudopregnant surrogate mother.

7

9. Gene therapy :

Gene therapy is an experimental technique that uses to treat or prevent disease. In the future, this technique may allow doctors to treat a disorder by inserting a gene into patients gene instead of using drugs or surgery.

20. Genetically modified plant materials :

⇒ Genetically modified (GM) plants with improved nutritional qualities have more recently have been developed, such as plants containing higher properties of unsaturated fatty acids (omega 3 & omega 6).

⇒ eg : Soyabean, cotton, potatoes.

21. IPR :

⇒ Intellectual property Rights deals with the rules for securing and enforcing legal rights to inventions.

⇒ It does protect the exclusive control of intangible assets.

22. Ethics & Bioethics :

⇒ Ethics is a philosophical discipline pertaining to notions of good & bad, right or wrong - our moral life in community.

⇒ Bioethics is the applications of ethics to the field of medicine & healthcare.

23. Ethical limits of animal use :

⇒ Animal ethics is a term of academia to name the branch of ethics that examines human-animal relationship.

⇒ Research should be undertaken with a clear scientific purpose.

24. principles of Bioethics :

1. principle of respect for autonomy

2. principle of Justice

3. principle of non-maleficence

4. principle of Justice

25. End of life & Beginning of life :

⇒ The discovery raises the possibility that the start and end of life care intimately connected.



9

⇒ physicians should encourage dialogue about end of life and use of advance directives so that autonomy can be preserved even if patient decision-making capacity is lost.