

Microbes in Human Welfare

Question 1.

A nitrogen fixing microbe associated with the fern *Azolla* in rice fields is

- (a) *Frankia*
- (b) *Rhizobium*
- (c) *Spirulina*
- (d) *Anabaena*

Answer:

- (d) *Anabaena*

Question 2.

Azolla pinnata has been found to be an important biofertiliser for paddy crops. This quality is due to the presence of

- (a) N_2 fixing bacteria
- (b) N_2 fixing cyanobacteria
- (c) mycorrhizae
- (d) all of these

Answer:

- (b) N_2 fixing cyanobacteria

Question 3.

Which of the following is widely used as a successful biofertiliser in Indian rice field ?

- (a) *Rhizobium*
- (b) *Acacia arabica*
- (c) *Acalypha indica*
- (d) *Azolla pinnata*

Answer:

- (d) *Azolla pinnata*

Question 4.

Which of the following options includes biofertilisers ?

- (a) cowdung manure and farmyard waste
- (b) A quick growing crop ploughed back into the field
- (c) *Nostoc*, *Oscillatoria*
- (d) All of these

Answer:

- (c) *Nostoc*, *Oscillatoria*

Question 5.

Which of the following is a non-symbiotic biofertiliser ?

- (a) VAM
- (b) *Azotobacter*
- (c) *Anabaena*
- (d) *Rhizobium*

Answer:

- (b) *Azotobacter*

Question 6.

Nitrogen fixation in root nodules of *Alnus* is brought about by

- (a) *Frankia*
- (b) *Azorhizobium*
- (c) *Bradyrhizobium*
- (d) *Clostridium*

Answer:

- (a) *Frankia*

Question 7.

The vitamin whose content increases following the conversion of milk into curd by lactic acid bacteria is

- (a) vitamin C
- (b) vitamin D
- (c) vitamin B₁₂
- (d) vitamin E

Answer:

- (c) vitamin B₁₂

Question 8.

Wastewater treatment generates a large quantity of sludge, which can be treated by

- (a) anaerobic digesters
- (b) floe
- (c) chemicals
- (d) oxidation pond

Answer:

- (a) anaerobic digesters

Question 9.

Methanogenic bacteria are not found in

- (a) rumen of cattle
- (b) gobar gas plant
- (c) bottom of water-logged paddy field
- (d) activated sludge

Answer:

- (d) activated sludge

Question 10.

The primary treatment of wastewater involves the removal of

- (a) dissolved impurities
- (b) stable particles
- (c) toxic substances
- (d) harmful bacteria

Answer:

- (b) stable particles

Question 11.

BOD of wastewater is estimated by measuring the amount of

- (a) total organic matter
- (b) biodegradable organic matter

- (c) oxygen evolution
 - (d) oxygen consumption
- Answer:
- (d) oxygen consumption

Question 12.

Which one of the following alcoholic drinks is produced without distillation ?

- (a) Wine
- (b) Whisky
- (c) Rum
- (d) Brandy

Answer:

- (a) Wine

Question 13.

The free-living fungus *Trichoderma* can be used for

- (a) killing insects
- (b) biological control of plant diseases
- (c) controlling butterfly caterpillars
- (d) producing antibiotics

Answer:

- (b) biological control of plant diseases

Question 14.

Mycorrhiza does not help the host plant in

- (a) enhancing its phosphorus uptake capacity
- (b) increasing its tolerance to drought
- (c) enhancing its resistance to root pathogens
- (d) increasing its resistance to insects

Answer:

- (d) increasing its resistance to insects

Question 15.

Which one of the following is not a nitrogen-fixing organism ?

- (a) *Anabaena*
- (b) *Nostoc*
- (c) *Azotobacter*
- (d) *Pseudomonas*

Answer:

- (d) *Pseudomonas*

Question 16.

Which of the following microbes is a proteinacious infectious agent ?

- (a) Fungi
- (b) Prions
- (c) Bacteria
- (d) Protozoa

Answer:

- (b) Prions

Question 17.

The nutritive medium for growing bacteria and many fungi in laboratory is called

- (a) growth media
- (b) suspension media
- (c) culture media
- (d) colonial media

Answer:

- (c) culture media

Question 18.

The inoculum is added to the fresh milk in order to convert milk into curd, the term 'inoculum' here refers to

- (a) a starter rich in vitamins B₆
- (b) a starter rich in proteins
- (c) a starter containing millions of LAB
- (d) an aerobic digester

Answer:

- (c) a starter containing millions of LAB

Question 19.

Which of the following organisms is used in the production of beverages ?

- (a) *Penicillium notatum*
- (b) *Saccharomyces cerevisiae*
- (c) *Aspergillus niger*
- (d) *Clostridium butylicum*

Answer:

- (b) *Saccharomyces cerevisiae*

Question 20.

Which of the following options contains the end products formed during anaerobic respiration in yeast ?

- (a) H₂O, CO₂ and energy
- (b) H₂S, C₆H₁₂O₆ and energy
- (c) CO₂, C₂H₅OH and energy
- (d) H₂O and CO₂

Answer:

- (c) CO₂, C₂H₅OH and energy

Question 21.

The chemical substances produced by some microbes which can kill or retard the growth of other microbes are called

- (a) antiseptics
- (b) antacids
- (c) antibiotics
- (d) all of these

Answer:

- (c) antibiotics

Question 22.

Antibiotics are obtained from

- (a) bacteria
- (b) fungi
- (c) actinomycetes
- (d) all of these

Answer:

- (d) all of these

Question 23.

Which of the following antibiotics was extensively used to treat American soldiers wounded in World War 11 ?

- (a) Neomycin
- (b) Bacitracin
- (c) Chloramphenicol
- (d) Penicillin

Answer:

- (d) Penicillin

Question 24.

Streptomycin is obtained from

- (a) *Streptomyces griseus*
- (b) *S. cerevisiae*
- (c) *S. venezuelae*
- (d) *S. rimosus*

Answer:

- (a) *Streptomyces griseus*

Question 25.

Integrated Pest Management (IPM) discourages the excessive use of

- (a) biological methods
- (b) chemical pesticides
- (c) mechanical methods
- (d) all of these

Answer:

- (b) chemical pesticides

Question 26.

Which of the following is not used as a biopesticide ?

- (a) *Trichoderma harzianum*
- (b) Nucleopolyhedrovirus
- (c) *Xanthomonas campestris*
- (d) *Bacillus thuringiensis*

Answer:

- (c) *Xanthomonas campestris*

Question 27.

Organic farming does not include

- (a) green manures
- (b) chemical fertilisers

(c) farmyard manures

(d) compost

Answer:

(b) chemical fertilisers

Question 28.

Organic farming includes

(a) use of fertilisers and pesticides of biological origin

(b) IPM (Integrated Pest Management)

(c) locally developed pest resistant varieties

(d) all of these

Answer:

(d) all of these

Question 29.

Living organisms used to enrich the nutrient quality of the soil are called as

(a) biocontrol agents

(b) biofertilisers

(c) synthetic fertilisers

(d) natural fertilisers

Answer:

(d) natural fertilisers

Question 30.

Biofertilisers are

(a) some bacteria and cyanobacteria

(b) fertilisers formed by ploughing in barseem

(c) fertilisers obtained by decay of dead organisms

(d) fertilisers prepared by mixing cattle dung with crop residues

Answer:

(a) some bacteria and cyanobacteria

Question 31.

Biofertilisers are the living organisms which

(a) bring about soil nutrient enrichment

(b) maximise the ecological benefits

(c) minimise the environmental hazards

(d) all of these

Answer:

(d) all of these

Question 32.

Which one of the following can be used as biofertiliser in cotton field ?

(a) Azolla-Anabaena

(b) Streptococcus

(c) Azospirillum

(d) Azotobacter chroococcum

Answer:

(d) Azotobacter chroococcum

Question 33.

The symbiotic association between fungi and roots of higher plants is referred to as

- (a) lichen
- (b) mycorrhiza
- (c) biofertiliser
- (d) biocontrol agent

Answer:

- (b) mycorrhiza

Question 34.

Cyanobacteria are

- (a) heterotrophs
- (b) chemotrophs
- (c) autotrophs
- (d) organotrophs

Answer:

- (c) autotrophs

Question 35.

Enzyme which has the fibrinolytic effect is

- (a) protease
- (b) amylase
- (c) lipase
- (d) streptokinase

Answer:

- (d) streptokinase

Question 36.

Statins used for lowering blood cholesterol level are extracted from

- (a) algae
- (b) bacteria
- (c) viruses
- (d) yeast

Answer:

- (d) yeast

Question 37.

Monascus purpureus is a yeast commercially used in the production of

- (a) citric acid
- (b) ethanol
- (c) blood cholesterol lowering statins
- (d) streptokinase for removing clots from blood vessels

Answer:

- (c) blood cholesterol lowering statins

Question 38

is the first step of sewage treatment.

- (a) Precipitation
- (b) Chlorination
- (c) Sedimentation

(d) Aeration

Answer:

(c) Sedimentation

Question 39.

During the primary treatment of sewage, solid particles that settle down are called

(a) flocs

(b) primary sludge

(c) activated sludge

(d) anaerobic sludge

Answer:

(b) primary sludge

Question 40.

The purpose of biological treatment of waste water is to

(a) reduce BOD

(b) increase BOD

(c) reduce sedimentation

(d) increase sedimentation

Answer:

(a) reduce BOD

Question 41.

The masses of bacteria held together by slime and fungal filaments to form mesh-like structures are called as

(a) primary sludge

(b) flocs

(c) activated sludge

(d) anaerobic sludge

Answer:

(b) flocs

Question 42.

BOD is.....in polluted water and in potable water.

(a) more, less

(b) less, more

(c) less in both

(d) medium in both

Answer:

(a) more, less

Question 43.

In the sewage treatment, bacterial flocs are allowed to sediment in a settling tank. This sediment is called as

(a) inactivated sludge

(b) activated sludge

(c) primary sludge

(d) secondary sludge

Answer:

(b) activated sludge

Question 44.

Which of the following steps is taken by the Ministry of Environment and Forests to protect rivers from water pollution ?

- (a) Ganga Action Plan
- (b) Narmada Action Plan
- (c) Yamuna Action Plan
- (d) Both (a) and (c)

Answer:

- (d) Both (a) and (c)

Question 45.

Methanogens, growing anaerobically on cellulosic material produce

- (a) methane
- (b) methane and carbon dioxide
- (c) methane and hydrogen
- (d) methane, carbon dioxide and hydrogen

Answer:

- (d) methane, carbon dioxide and hydrogen

Question 46.

Which of the following bacteria is present in the rumen of cattle ?

- (a) Azotobacter
- (b) Rhizobium
- (c) Methanobacterium
- (d) Azospirillum

Answer:

- (c) Methanobacterium

Question 47.

Process of biogas production is

- (a) aerobic process
- (b) anaerobic process
- (c) active process
- (d) passive process

Answer:

- (b) anaerobic process

Question 48.

Biogas is produced by

- (a) aerobic breakdown of biomass
- (b) anaerobic breakdown of biomass
- (c) with the help of methanogenic bacteria
- (d) both (b) and (c)

Answer:

- (d) both (b) and (c)

Question 49.

Dragonflies are used to get rid of

- (a) mosquitoes
- (b) aphids

- (c) butterfly caterpillars
- (d) both (a) and (b)

Answer:

- (a) mosquitoes

Question 50.

A microbial biocontrol agent that can be used to control butterfly caterpillars is

- (a) *Trichoderma polysporum*
- (b) *Bacillus thuringiensis*
- (c) *Streptococcus*
- (d) mycorrhiza

Answer:

- (b) *Bacillus thuringiensis*

Question 51.

Bacillus thuringiensis is used to control

- (a) bacterial pathogens
- (b) fungal pathogens
- (c) nematodes
- (d) insect pests

Answer:

- (d) insect pests

Question 52.

Bacillus thuringiensis (Bt) strains have been used for designing novel

- (a) biofertilisers
- (b) bio-metallurgical techniques
- (c) bio-mineralisation process
- (d) bio-insecticidal plants

Answer:

- (d) bio-insecticidal plants

Question 53.

Trichoderma harzianum has proved to be a useful microorganism for

- (a) gene transfer in higher plants
- (b) biological control of soil-borne plant pathogens
- (c) bioremediation of contaminated soils
- (d) reclamation of wastelands

Answer:

- (b) biological control of soil-borne plant pathogens

Question 54.

Baculoviruses (Nucleopolyhedrovirus) do not show

- (a) host specificity
- (b) narrow spectrum applications
- (c) effects on non-target pathogens
- (d) utility in IPM programme

Answer:

- (c) effects on non-target pathogens

Question 55.

The residue left after methane production from cattle dung is

- (a) burnt
- (b) buried in land fills
- (c) used as manure
- (d) used in civil construction

Answer:

- (c) used as manure

Question 56.

Methanogens do not produce

- (a) oxygen
- (b) methane
- (c) hydrogen sulphide
- (d) carbon dioxide

Answer:

- (a) oxygen

Question 57.

Microbes are present in

- (a) soil
- (b) thermal vents
- (c) polluted water
- (d) all of these

Answer:

- (d) all of these