

CUET MCQ Questions and Solutions from UNIT 3 (1)

1. Which parasite causes malaria?

- A) *Ascaris lumbricoides*
- B) Plasmodium
- C) *Wuchereria bancrofti*
- D) *Entamoeba histolytica*

Answer: B) Plasmodium

Solution: Malaria is caused by the protozoan parasite *Plasmodium*, transmitted by female *Anopheles* mosquitoes. Common species include *Plasmodium falciparum* and *Plasmodium vivax*.

2. What is the vector for filariasis?

- A) Housefly
- B) Mosquito (*Culex* species)
- C) Sandfly
- D) Tick

Answer: B) Mosquito (*Culex* species)

Solution: Filariasis is caused by *Wuchereria bancrofti* or *Brugia malayi* and is transmitted by *Culex* mosquitoes during their blood meal.

3. Ascariasis is caused by which organism?

- A) Virus
- B) Bacteria
- C) Nematode
- D) Protozoa

Answer: C) Nematode

Solution: Ascariasis is caused by the roundworm *Ascaris lumbricoides*, a type of nematode, and spreads through contaminated food or water.

4. Which bacteria is responsible for typhoid?

- A) *Salmonella typhi*
- B) *Vibrio cholerae*
- C) *Streptococcus pneumoniae*
- D) *Mycobacterium tuberculosis*

Answer: A) *Salmonella typhi*

Solution: Typhoid is caused by *Salmonella typhi*, which is transmitted through contaminated water and food, leading to high fever and abdominal pain.

5. What is the causative agent of pneumonia?

- A) *Escherichia coli*
- B) *Streptococcus pneumoniae*
- C) *Entamoeba histolytica*
- D) *Salmonella typhi*

Answer: B) *Streptococcus pneumoniae*

Solution: Pneumonia is caused by bacteria like *Streptococcus pneumoniae* or *Haemophilus influenzae* and affects the lungs, leading to breathing difficulty.

6. Which pathogen causes common cold?

- A) Rhinovirus
- B) Coronavirus
- C) Influenza virus
- D) Dengue virus

Answer: A) Rhinovirus

Solution: The common cold is caused by Rhinoviruses and is highly contagious, spreading through air or contact with infected surfaces.

7. Amoebiasis is caused by which organism?

- A) *Ascaris lumbricoides*
- B) *Entamoeba histolytica*
- C) *Wuchereria bancrofti*
- D) *Plasmodium vivax*

Answer: B) *Entamoeba histolytica*

Solution: Amoebiasis is caused by *Entamoeba histolytica*, a protozoan parasite, and spreads through contaminated water or food, leading to dysentery.

8. What is the causative agent of ringworm?

- A) Bacteria
- B) Fungi
- C) Protozoa
- D) Virus

Answer: B) Fungi

Solution: Ringworm is caused by dermatophyte fungi like *Trichophyton* and spreads through direct contact or contaminated surfaces.

9. The vector for malaria is:

- A) Male *Anopheles* mosquito
- B) Female *Anopheles* mosquito
- C) *Culex* mosquito

D) Sandfly

Answer: B) Female *Anopheles* mosquito

Solution: Only female *Anopheles* mosquitoes can transmit *Plasmodium* parasites, as they feed on blood for egg production.

10. Which disease is caused by *Wuchereria bancrofti*?

A) Malaria

B) Filariasis

C) Typhoid

D) Ascariasis

Answer: B) Filariasis

Solution: Filariasis, also known as elephantiasis, is caused by the parasitic worms *Wuchereria bancrofti* and spreads through mosquito bites.

11. Ascariasis primarily affects which organ?

A) Liver

B) Intestine

C) Lungs

D) Brain

Answer: B) Intestine

Solution: The roundworm *Ascaris lumbricoides* resides in the intestine, leading to malnutrition and intestinal obstruction.

12. Which symptom is not associated with typhoid?

A) High fever

B) Rash on abdomen

C) Joint pain

D) Severe diarrhea

Answer: C) Joint pain

Solution: Typhoid symptoms include prolonged fever, abdominal pain, and rash but do not typically involve joint pain.

13. What is a symptom of amoebiasis?

A) Bloody stool

B) Cough

C) High fever

D) Rash

Answer: A) Bloody stool

Solution: Amoebiasis affects the intestine, leading to dysentery characterized by bloody stools and abdominal pain.

14. Pneumonia affects which body part?

- A) Lungs
- B) Liver
- C) Kidneys
- D) Intestine

Answer: A) Lungs

Solution: Pneumonia is an infection that inflames the air sacs in the lungs, causing difficulty in breathing and fluid accumulation.

15. Common cold spreads primarily through:

- A) Airborne droplets
- B) Water
- C) Mosquito bites
- D) Contaminated food

Answer: A) Airborne droplets

Solution: The common cold spreads through respiratory droplets released when an infected person sneezes or coughs.

16. Which disease is also called "elephantiasis"?

- A) Ascariasis
- B) Filariasis
- C) Malaria
- D) Typhoid

Answer: B) Filariasis

Solution: Filariasis is referred to as elephantiasis due to the extreme swelling of limbs caused by lymphatic blockage.

17. What is the main symptom of ringworm?

- A) Cough
- B) Circular rash
- C) Fever
- D) Diarrhea

Answer: B) Circular rash

Solution: Ringworm presents as a circular, itchy rash on the skin caused by fungal infection.

18. Which stage of Plasmodium enters the human bloodstream during a mosquito bite?

- A) Trophozoite

- B) Merozoite
- C) Sporozoite
- D) Gametocyte

Answer: C) Sporozoite

Solution: When an infected female *Anopheles* mosquito bites a human, sporozoites from its salivary glands are injected into the bloodstream, initiating malaria infection.

19. Which parasite causes lymphatic filariasis?

- A) *Taenia solium*
- B) *Wuchereria bancrofti*
- C) *Entamoeba histolytica*
- D) *Plasmodium vivax*

Answer: B) *Wuchereria bancrofti*

Solution: Lymphatic filariasis is caused by *Wuchereria bancrofti*, which leads to swelling in the lymphatic system, primarily in the lower limbs.

20. Typhoid fever is transmitted through:

- A) Contaminated food and water
- B) Mosquito bites
- C) Direct contact with infected persons
- D) Airborne droplets

Answer: A) Contaminated food and water

Solution: *Salmonella typhi*, the causative agent of typhoid, spreads through consumption of contaminated food or water.

21. Pneumonia caused by *Streptococcus pneumoniae* is commonly spread by:

- A) Vector transmission
- B) Airborne droplets
- C) Contaminated food
- D) Fecal contamination

Answer: B) Airborne droplets

Solution: Pneumonia spreads when an infected person coughs or sneezes, releasing bacteria into the air.

22. Common cold primarily infects which part of the body?

- A) Lungs
- B) Nose and throat
- C) Stomach

D) Intestine

Answer: B) Nose and throat

Solution: The common cold affects the upper respiratory tract, especially the nose and throat, causing congestion and irritation.

23. The characteristic symptom of amoebiasis is:

A) High fever

B) Severe diarrhea with mucus and blood

C) Swollen lymph nodes

D) Intense itching

Answer: B) Severe diarrhea with mucus and blood

Solution: Amoebiasis caused by *Entamoeba histolytica* leads to dysentery, with blood and mucus in stools.

24. What is the primary treatment for typhoid fever?

A) Antiviral medication

B) Antibiotics

C) Vaccination

D) Antifungal medication

Answer: B) Antibiotics

Solution: Typhoid fever, caused by *Salmonella typhi*, is treated effectively with antibiotics like ciprofloxacin or azithromycin.

25. Which of the following is not a fungal disease?

A) Ringworm

B) Athlete's foot

C) Amoebiasis

D) Candidiasis

Answer: C) Amoebiasis

Solution: Amoebiasis is a protozoan disease caused by *Entamoeba histolytica*, while the others are fungal infections.

26. Ringworm spreads through:

A) Airborne droplets

B) Contaminated food

C) Direct contact or contaminated objects

D) Mosquito bites

Answer: C) Direct contact or contaminated objects

Solution: Fungal spores that cause ringworm spread through skin-to-skin contact or shared items like towels or clothes.

27. Which of the following is not a symptom of filariasis?

- A) Lymph node swelling
- B) Fever
- C) Severe cough
- D) Thickened skin in affected areas

Answer: C) Severe cough

Solution: Filariasis mainly causes swelling in the lymph nodes and skin thickening, but not respiratory symptoms like severe cough.

28. The most effective way to prevent malaria is:

- A) Consuming antibiotics
- B) Avoiding stagnant water
- C) Vaccination
- D) Avoiding physical contact with infected individuals

Answer: B) Avoiding stagnant water

Solution: Preventing mosquito breeding by removing stagnant water and using insecticide-treated nets are the best ways to control malaria.

29. What is the characteristic symptom of typhoid?

- A) Swelling in limbs
- B) Intermittent fever with abdominal pain
- C) Severe headache
- D) Difficulty in breathing

Answer: B) Intermittent fever with abdominal pain

Solution: Typhoid fever is characterized by high fever, abdominal discomfort, and sometimes a rash on the abdomen.

30. Which of these diseases is caused by a protozoan?

- A) Filariasis
- B) Ringworm
- C) Amoebiasis
- D) Pneumonia

Answer: C) Amoebiasis

Solution: Amoebiasis is caused by the protozoan *Entamoeba histolytica*, which affects the intestine.

31. Which microorganism is commonly used in the production of bread and beer?

- A) *Lactobacillus acidophilus*
- B) *Saccharomyces cerevisiae*

- C) *Rhizobium*
- D) *Penicillium*

Answer: B) *Saccharomyces cerevisiae*

Solution: *Saccharomyces cerevisiae* (yeast) is used in fermentation to produce bread, beer, and wine by converting sugars into alcohol and carbon dioxide.

32. Curd is prepared with the help of which bacteria?

- A) *Rhizobium*
- B) *Lactobacillus*
- C) *Saccharomyces*
- D) *Clostridium*

Answer: B) *Lactobacillus*

Solution: *Lactobacillus* bacteria convert milk into curd by fermenting lactose into lactic acid, which coagulates milk proteins.

33. Which microorganism is used in the production of citric acid?

- A) *Aspergillus niger*
- B) *Penicillium*
- C) *Rhizobium*
- D) *Clostridium*

Answer: A) *Aspergillus niger*

Solution: The fungus *Aspergillus niger* is widely used in industrial fermentation to produce citric acid from sugar sources.

34. Which bacteria are used as biofertilizers for leguminous plants?

- A) *Lactobacillus*
- B) *Rhizobium*
- C) *Azotobacter*
- D) *Clostridium*

Answer: B) *Rhizobium*

Solution: *Rhizobium* forms symbiotic associations with leguminous plants and fixes atmospheric nitrogen, improving soil fertility.

35. The process of converting milk into cheese involves:

- A) Alcoholic fermentation
- B) Lactic acid fermentation
- C) Nitrification
- D) Sulfate reduction

Answer: B) Lactic acid fermentation

Solution: Lactic acid bacteria convert lactose in milk into lactic acid, leading to the formation of cheese.

36. Methane gas is primarily produced in biogas plants by:

- A) Aerobic bacteria
- B) Methanogenic bacteria
- C) Photosynthetic bacteria
- D) Denitrifying bacteria

Answer: B) Methanogenic bacteria

Solution: Methanogenic bacteria, such as *Methanobacterium*, produce methane during the anaerobic digestion of organic matter.

37. Which microorganism is used in the commercial production of butyric acid?

- A) *Clostridium butyricum*
- B) *Penicillium*
- C) *Aspergillus niger*
- D) *Saccharomyces cerevisiae*

Answer: A) *Clostridium butyricum*

Solution: *Clostridium butyricum* is a bacterium that produces butyric acid through fermentation.

38. What is the role of microbes in sewage treatment?

- A) Fermentation
- B) Decomposition of organic matter
- C) Nitrate reduction
- D) Nitrogen fixation

Answer: B) Decomposition of organic matter

Solution: Microbes break down organic matter in sewage through aerobic and anaerobic processes, making the water safe for disposal.

39. Biofertilizers like *Azolla* are associated with which type of symbiotic microorganism?

- A) *Rhizobium*
- B) Cyanobacteria (*Anabaena*)
- C) *Lactobacillus*
- D) *Saccharomyces*

Answer: B) Cyanobacteria (*Anabaena*)

Solution: Cyanobacteria like *Anabaena* live symbiotically with *Azolla* and fix atmospheric nitrogen, enriching the soil.

40. Which microorganism is used in the production of ethanol?

- A) *Saccharomyces cerevisiae*
- B) *Penicillium*
- C) *Rhizobium*
- D) *Lactobacillus*

Answer: A) *Saccharomyces cerevisiae*

Solution: *Saccharomyces cerevisiae* ferments sugar into ethanol, widely used in alcoholic beverages and biofuels.

41. In biogas plants, what serves as the raw material?

- A) Wood
- B) Animal waste and organic matter
- C) Sand
- D) Coal

Answer: B) Animal waste and organic matter

Solution: Organic waste such as animal dung and crop residues are digested anaerobically in biogas plants to produce methane.

42. Which is an example of a microbial biocontrol agent?

- A) *Bacillus thuringiensis* (*Bt*)
- B) *Saccharomyces cerevisiae*
- C) *Lactobacillus*
- D) *Clostridium*

Answer: A) *Bacillus thuringiensis* (*Bt*)

Solution: *Bacillus thuringiensis* produces proteins toxic to insect pests and is used as a biopesticide in agriculture.

43. Antibiotics like penicillin are obtained from:

- A) Bacteria
- B) Fungi
- C) Viruses
- D) Algae

Answer: B) Fungi

Solution: Penicillin is derived from the fungus *Penicillium notatum*, which inhibits bacterial growth.

44. Which bacteria play a significant role in sewage treatment by removing nitrogen compounds?

- A) *Nitrosomonas*
- B) *Lactobacillus*

C) *Methanobacterium*

D) *Clostridium*

Answer: A) *Nitrosomonas*

Solution: *Nitrosomonas* oxidizes ammonia into nitrites, reducing nitrogen levels in sewage water.

45. *Trichoderma* species are used as:

A) Biofertilizers

B) Biocontrol agents

C) Antibiotics

D) Food processors

Answer: B) Biocontrol agents

Solution: *Trichoderma* species suppress plant pathogens by competing with them in the rhizosphere.

46. Which microorganism is used in the production of Swiss cheese?

A) *Lactobacillus*

B) *Propionibacterium shermanii*

C) *Saccharomyces cerevisiae*

D) *Aspergillus niger*

Answer: B) *Propionibacterium shermanii*

Solution: *Propionibacterium shermanii* produces carbon dioxide during fermentation, forming the characteristic holes in Swiss cheese.

47. Which microorganism is used for the production of bioethanol?

A) *Lactobacillus*

B) *Saccharomyces cerevisiae*

C) *Methanobacterium*

D) *Rhizobium*

Answer: B) *Saccharomyces cerevisiae*

Solution: *Saccharomyces cerevisiae* ferments sugars to produce ethanol, a renewable biofuel.

48. What is the main purpose of secondary sewage treatment?

A) Removal of solid waste

B) Breakdown of organic matter by microbes

C) Chlorination of water

D) Removal of heavy metals

Answer: B) Breakdown of organic matter by microbes

Solution: Secondary sewage treatment uses aerobic microbes to degrade organic matter, reducing Biological Oxygen Demand (BOD).

49. The main gas produced in a biogas plant is:

- A) Carbon dioxide
- B) Methane
- C) Oxygen
- D) Hydrogen

Answer: B) Methane

Solution: Methane is the primary gas produced in biogas plants through anaerobic digestion by methanogenic bacteria.

50. *Monascus purpureus* is used in the production of:

- A) Antibiotics
- B) Blood cholesterol-lowering agents
- C) Ethanol
- D) Cheese

Answer: B) Blood cholesterol-lowering agents

Solution: *Monascus purpureus* produces statins, which are used to lower blood cholesterol levels.

CUET MCQ Questions from UNIT 3 (2)

- 1. Which microorganism is used in the production of acetic acid?**
 - A) *Acetobacter aceti*
 - B) *Saccharomyces cerevisiae*
 - C) *Penicillium*
 - D) *Lactobacillus*
- 2. What is the main purpose of using biofertilizers?**
 - A) Pest control
 - B) Enhancing soil fertility
 - C) Increasing crop resistance to drought
 - D) Producing biogas
- 3. The organism *Bacillus thuringiensis* is used for controlling:**
 - A) Bacterial infections
 - B) Fungal infections
 - C) Insect pests
 - D) Weed growth
- 4. Which is an example of a symbiotic nitrogen-fixing bacterium?**
 - A) *Azotobacter*
 - B) *Rhizobium*
 - C) *Clostridium*
 - D) *Penicillium*
- 5. Microbes can be used to produce biogas, which consists primarily of:**
 - A) Oxygen
 - B) Methane
 - C) Carbon monoxide
 - D) Hydrogen sulfide
- 6. The use of microorganisms to control soil-borne plant diseases is called:**
 - A) Biocontrol
 - B) Fertilization
 - C) Decomposition
 - D) Fermentation
- 7. Industrial alcohol is produced by fermentation using:**

- A) *Aspergillus*
- B) *Saccharomyces cerevisiae*
- C) *Lactobacillus*
- D) *Rhizobium*

8. Sewage treatment plants use which bacteria in the aerobic process?

- A) *Lactobacillus*
- B) *Nitrosomonas*
- C) *Methanobacterium*
- D) *Rhizobium*

9. Cyanobacteria like *Anabaena* and *Nostoc* are used as:

- A) Antibiotics
- B) Biocontrol agents
- C) Biofertilizers
- D) Biopesticides

10. Which gas is responsible for the "smell" in biogas plants?

- A) Hydrogen
- B) Sulfur dioxide
- C) Hydrogen sulfide
- D) Nitrogen

11. Which method involves the use of controlled pollination to combine desirable traits in plants?

- A) Tissue culture
- B) Plant breeding
- C) Biofortification
- D) Genetic engineering

12. Which technique is used to produce genetically identical plants?

- A) Plant breeding
- B) Single-cell protein
- C) Tissue culture
- D) Apiculture

13. Which crop variety is an example of biofortification?

- A) Golden rice
- B) Hybrid maize
- C) BT cotton

D) Sugarcane

14. What is the main product of single-cell protein (SCP)?

- A) Antibiotics
- B) Proteins
- C) Carbohydrates
- D) Vitamins

15. Which species of honeybee is most commonly used in apiculture?

- A) *Apis dorsata*
- B) *Apis cerana indica*
- C) *Apis mellifera*
- D) *Trigona*

16. Which process involves feeding algae, fungi, or bacteria to produce high-protein biomass?

- A) Tissue culture
- B) Single-cell protein production
- C) Plant breeding
- D) Apiculture

17. Which is a primary goal of animal husbandry?

- A) Developing hybrid plants
- B) Enhancing the genetic quality of livestock
- C) Producing biofertilizers
- D) Preserving forests

18. What is the significance of artificial insemination in livestock improvement?

- A) Reduces breeding costs
- B) Prevents diseases
- C) Enhances genetic traits
- D) All of the above

19. What is the main purpose of biofortification?

- A) Increasing crop productivity
- B) Enhancing nutrient content in crops
- C) Improving resistance to pests
- D) Reducing water requirements

20. Which of the following is an example of a hybrid plant variety?

- A) IR-8 rice
- B) BT cotton
- C) Golden rice
- D) Penicillin

21. Which microorganism is widely used for SCP production?

- A) *Rhizobium*
- B) *Spirulina*
- C) *Saccharomyces cerevisiae*
- D) *Clostridium*

22. What is the term for bee-keeping?

- A) Sericulture
- B) Aquaculture
- C) Apiculture
- D) Pisciculture

23. Which nutrient deficiency does biofortified wheat primarily address?

- A) Vitamin C
- B) Iron
- C) Zinc
- D) Calcium

24. Which is an important plant tissue culture technique?

- A) Callus culture
- B) Fermentation
- C) Composting
- D) Pollination

25. Which hybrid variety increased wheat production during the Green Revolution?

- A) Sonalika
- B) IR-8
- C) Red gram
- D) BT brinjal

26. Which is an example of a single-cell protein source?

- A) *Spirulina*
- B) Wheat

- C) Maize
- D) Potato

27. What is the main purpose of tissue culture?

- A) To develop antibiotics
- B) To propagate disease-free plants
- C) To increase crop size
- D) To extract natural dyes

28. Which of the following is an example of biofortified crop?

- A) BT cotton
- B) IR-36 rice
- C) Zinc-enriched rice
- D) Hybrid maize

29. Which process is involved in producing high-yield and disease-resistant crops?

- A) Biofortification
- B) Plant breeding
- C) Apiculture
- D) Composting

30. What is the primary product of apiculture?

- A) Wax
- B) Silk
- C) Honey
- D) Protein

31. Which type of microorganism is commonly used for single-cell protein production?

- A) Viruses
- B) Fungi
- C) Protozoa
- D) Nematodes

32. Which crop has been genetically improved to produce Vitamin A?

- A) Wheat
- B) Golden rice
- C) Potato
- D) Maize

33. What is the aim of biofortification?

- A) Developing pest-resistant plants
- B) Enhancing the nutritional quality of food crops
- C) Increasing crop yield
- D) Reducing soil erosion

34. Which of these is a benefit of plant tissue culture?

- A) Requires large land areas
- B) Produces disease-free plants
- C) Takes longer time to grow plants
- D) Cannot clone rare species

35. Which of the following is an example of animal husbandry?

- A) Breeding high-yield crops
- B) Rearing livestock for milk and meat
- C) Biofortification of crops
- D) Tissue culture in plants

36. Which bee species is commonly used in commercial honey production?

- A) *Apis dorsata*
- B) *Apis mellifera*
- C) *Apis cerana indica*
- D) *Apis florea*

37. Which microorganism is commonly used in biofertilizers?

- A) *Rhizobium*
- B) *Fusarium*
- C) *Spirulina*
- D) *Penicillium*

38. Which tissue culture technique helps conserve endangered plant species?

- A) Fermentation
- B) Cryopreservation
- C) Composting
- D) Pollination

39. Which practice involves selective breeding and rearing of animals for increased productivity?

- A) Apiculture

- B) Animal husbandry
- C) Sericulture
- D) Aquaculture

40. Which product is derived from apiculture besides honey?

- A) Silk
- B) Wax
- C) Biofertilizers
- D) Antibiotics

41. What is the primary function of the immune system?

- A) Transport oxygen
- B) Fight infections and diseases
- C) Aid in digestion
- D) Regulate hormones

42. Which type of vaccine uses a weakened form of the pathogen?

- A) Inactivated vaccine
- B) Subunit vaccine
- C) Live-attenuated vaccine
- D) DNA vaccine

43. What is the primary cause of AIDS?

- A) Bacteria
- B) HIV (Human Immunodeficiency Virus)
- C) Protozoa
- D) Fungus

44. What type of cancer originates in blood-forming tissues?

- A) Carcinoma
- B) Sarcoma
- C) Leukemia
- D) Lymphoma

45. Which vaccine is recommended to prevent cervical cancer?

- A) BCG vaccine
- B) Hepatitis B vaccine
- C) HPV vaccine
- D) Polio vaccine

46. What is the most common mode of HIV transmission?

- A) Airborne droplets
- B) Contaminated water
- C) Unprotected sexual contact
- D) Insect bites

47. Which immune cells are targeted and destroyed by HIV?

- A) Red blood cells
- B) Platelets
- C) CD4 T cells
- D) B cells

48. What is a key symptom of adolescence?

- A) Loss of appetite
- B) Rapid physical and emotional changes
- C) Decreased cognitive ability
- D) Constant fatigue

49. Which is a major risk of prolonged drug and alcohol abuse?

- A) Enhanced memory
- B) Reduced physical fitness
- C) Liver damage and addiction
- D) Improved concentration

50. Which type of immunity is provided by vaccines?

- A) Innate immunity
- B) Active acquired immunity
- C) Passive immunity
- D) Temporary immunity