8th Science Lesson 6 Questions in English

6] Microorganisms

1. Which of the following statement is correct?

1) Microorganisms are too small in size that they can be seen through naked eye
2) The science that deals with the study of microorganisms is known as microbiology.
    a) 1 alone
    b) 2 alone
    c) 1, 2
    d) None

Explanation

Microorganisms are too small in size that they **cannot be seen through naked eye**. These organisms can be seen only with the help of a microscope, they are also known as microbes. The science that deals with the study of microorganisms is known as microbiology.

2. In which of the following microorganisms occur?

1) Ponds
2) Lakes
3) Soil
4) Inside our body
    a) 1, 2, 3
    b) 2, 3, 4
    c) 1, 3, 4
    d) All the above

Explanation

Microorganisms occur everywhere. They are found in **air, water (ponds, lakes, rivers and oceans), soil and even inside our bodies**.

3. In which of the following microorganisms cannot survive?

1) Hot springs
2) Deserts
3) Snow
    a) 1, 3
    b) 2, 3
    c) 1, 2
    d) None

Explanation

Some of **Microorganisms can even survive in severely adverse conditions, such as hot springs, deserts, snow and deep oceans**. They remain inactive under unfavourable conditions and become active during favourable conditions.

4. Microorganisms can be studied under____ categories

a) 3
b) 5
c) 6
d) 2

Explanation

Microorganisms can be studied under five categories. They are:

- Virus
- Bacteria
- Fungi
- Algae
- Protozoa

5. Which of the following statement is correct about Virus?

1) A virus is a tiny, particle made up of genetic material and protein.
2) Virus means 'poison' in Latin
3) Viruses are intracellular obligatory parasites.
    a) 1, 2
    b) 1, 3
    c) 2, 3
    d) All the above

Explanation

A virus is **a tiny, particle made up of genetic material and protein**. They are intermediate between living and non-living things. **Virus means 'poison' in Latin**. Viruses are **intracellular obligatory parasites**.

6. Viruses are_____ times smaller than bacteria

a) 10
b) 100
c) 10000
d) 100000

Explanation

Viruses are 10,000 times smaller than bacteria. Viruses have different shapes. They can be rod shaped, spherical or of other shapes.

7. Which of the following is the genetic material of virus?

a) RNA
b) DNA
c) Both a and b
d) Either a or b

Explanation

A **virus contains a core DNA or RNA**. Surrounding that core is a protein coat. The study of virus is called 'virology'.

8. Which of the following are the constituents of protein coat in virus?

1) Protein
2) Lipid
3) Carbohydrates
    a) 1, 2
    b) 1, 3
    c) 2, 3
    d) All the above

Explanation

In some viruses, the **protein coat is covered by an envelope made of proteins, lipids, and carbohydrates**. The envelope has spikes that help the virus particles attach to the host cells.

9. Which of the following are the living characters of virus?

1) They are inactive when present freely in the environment
2) They respond to heat, chemicals and radiations
3) They reproduce inside the host cells and produce copies of themselves.
    a) 1, 2
    b) 1, 3
    c) 2, 3
    d) All the above

Explanation

Living characters of virus:

- They **respond to heat, chemicals and radiations**.
- They **reproduce inside the host cells and produce copies of themselves**.

- They show **irritability**.

10. Which of the following are the Non-Living characters of virus?

1) They are inactive when present freely in the environment.
2) The metabolic machinery, cytoplasm is absent
3) They can be crystallized and stored for a very long time
    a) 1, 2
    b) 1, 3
    c) 2, 3
    d) All the above

Explanation

- They are **inactive when present freely in the environment**.
- They **can be crystallized and stored for a very long time**, like other non-living things.
- The **metabolic machinery, cytoplasm is absent**.

11. Bacteria are single-celled_____

a) Eukaryotes
b) Prokaryotes
c) Either a or b
d) Both a and b

Explanation

Bacteria are single-celled prokaryotes (**cells without nuclei**). Cells with nucleus are called as Eukaryotes.

12. Which of the following is considered to be the first living organisms on earth?

a) Virus
b) Bacteria
c) Fungus
d) Protozoa

Explanation

Bacteria are considered to be the first living organisms on earth. The study of Bacteria is called Bacteriology.

13. Which of the following statement about bacteria is correct?

1) Bacteria are grouped under the kingdom Protista
2) The size of bacteria ranges from 1µm to 5µm
3) Bacteria which does not require oxygen are called as Anaerobic bacteria

a) 1, 2
b) 1, 3
c) 2, 3
d) All the above

Explanation

Bacteria are **grouped under the kingdom Monera**. The **size of bacteria ranges from 1µm to 5µm** (micro-meter).

Bacteria are of two types based on respiration

• Aerobic bacteria (requires oxygen).

• **Anaerobic bacteria (Does not requires oxygen)**.

14. Protein synthesis in bacteria is carried out by_____

a) 70S ribosomes
b) 60S ribosomes
c) 80S ribosomes
d) 90S ribosomes

Explanation

Protein synthesis in bacteria is carried out by 70S ribosomes. A bacterium has an outer covering known as the cell wall. Nuclear material is represented by a nucleoid without nuclear membrane.

15. Which of the following is/are absent in bacteria?

a) Mitochondria
b) Golgi body
c) Endoplasmic reticulum
d) All the above

Explanation

Other cell organelles such as mitochondria, Golgi body endoplasmic reticulum etc., are absent in bacteria. Flagella aids in locomotion.

16. Match the following:

I.	Bacilli	1. Vibrio cholera
II.	Spirilla	2. Bacillus anthracis
III.	Cocci	3. Helicobacter pylori
IV.	Vibrio	4. Diplococcus

a) 2, 1, 3, 4

b) 2, 3, 4, 1
c) 2, 3, 1, 4
d) 1, 2, 3, 4

Explanation

Bacteria are described according to the shape of their cells. They are:

- **Bacilli** - Rod shaped bacteria. Eg. **Bacillus anthracis**
- **Spirilla** - Spiral shaped bacteria. Eg. **Helicobacter pylori**
- **Cocci** - Spherical or ball shaped bacteria. They can stick together in pairs (**diplococcus**)
- **Vibrio** - comma shaped bacteria. Eg. **Vibrio cholera**.

17. Match the following:

I.	Monotrichous	1. Flagella all around
II.	Lophotrichous	2. Without any flagella
III.	Peritrichous	3. Tuft of flagella at one end
IV.	Atrichous	4. Single flagella at one end

a) 1, 3, 2, 4
b) 4, 3, 1, 2
c) 3, 1, 2, 4
d) 4, 1, 2, 3

Explanation

Bacteria are also classified according to the number and arrangement of flagella, which are as follows:

- **Monotrichous** - **Single flagella at one end**. Eg. Vibrio cholera
- **Lophotrichous** - **Tuft of flagella at one end**. Eg. Pseudomonas.
- **Amphitrichous** - **Tuft of flagella at both ends**. Eg. Rhodospirillum rubrum.
- **Peritrichous** - **Flagella all around**. Eg. E. coli.
- **Atrichous** - **Without any flagella**. Eg. Corynebacterium diptherae

18. Cyanobacteria produce food by_____

a) Photosynthesis
b) Chemicals from environment
c) Symbiotic relationship
d) None

Explanation

Bacteria get their food in many ways. **Photosynthetic bacteria make their own food**. (Eg. **Cyanobacteria**).

19. Which of the following bacteria lives in the intestine of man?

a) Corynebacterium diptherae
b) E. Coli
c) Pseudomonas
d) Vibrio cholera

Explanation

Some bacteria exhibit symbiotic relationship (eg. **E.coli lives in the intestine of man**). Bacteria reproduces by fission (binary and multiple fission).

20. Fungi are group of_____ organisms that lack chlorophyll

a) Prokaryotic
b) Eukaryotic
c) Either a or b
d) Both a and b

Explanation

Fungi are **group of eukaryotic organisms** that lack chlorophyll. They grow in dark environments There are around 70,000 species of fungi, living in the world.

21. Which of the following are fungi?

1) Yeast
2) E. Coli
3) Penicillin

a) 1, 2
b) 1, 3
c) 2, 3
d) All the above

Explanation

Fungi may be either **unicellular (eg. Yeast)** or **multicellular (eg. Penicillium**). They are found in all kinds of habitats.

22. The study of fungi is called_____

a) Neurology
b) Mycology
c) Fungology
d) Proctology

Explanation

The study of fungi is called mycology. Fungi are included under kingdom Fungi. Some fungi are macroscopic (eg. Mushroom).

23. Which of the following statement is correct?

1) Yeasts are found freely in the atmosphere
2) The cell is ovoid in shape, containing cell wall and a nucleus.
    a) 1 alone
    b) 2 alone
    c) 1, 2
    d) None

Explanation

Yeasts are found freely in the atmosphere. Yeast grows in all kinds of media containing sugar. The cell is **ovoid in shape, containing cell wall and a nucleus.**

24. Yeast aids in fermentation with the help of the enzyme_____

a) Lipase
b) Zymase
c) Amylase
d) Lysosome

Explanation

Yeast aids in **fermentation with the help of the enzyme zymase**. Yeast respires anaerobically. Yeast reproduces by budding.

25. Which of the following statement is correct?

1) Mushrooms are found growing on wet soil in shaded places during the rainy season, such as at the roots of the trees.
2) There are small slit like structures under the umbrella which are known as gills.
3) The gills contain spores
    a) 1, 2
    b) 1, 3
    c) 2, 3
    d) All the above

Explanation

Mushrooms are found growing on wet soil in shaded places during the rainy season, such as at the roots of the trees. The umbrella shaped structure that grows above the soil is known as the fruiting body. There are **small slit like structures under the umbrella which are known as gills**. The **gills contain spores**.

26. _____ help in transport of nutrients for the growth of mushroom.

a) Stalk
b) Hyphae
c) Mycelium
d) Cap

Explanation

Walls of the hyphae are made up of chitin and cellulose. **Hyphae** help in **transport of nutrients for the growth of mushroom**.

27. Reproduction in mushroom is by the method of_____

1) Fragmentation
2) Budding
3) Spore formation

a) 1, 2
b) 1, 3
c) 2, 3
d) All the above

Explanation

Reproduction in mushroom is by the **method of fragmentation and spore formation**. Walls of the hyphae are made up of chitin and cellulose.

28. ____in turn is made up of thread-like structures called hyphae

a) Underground hyphae
b) Gills
c) Mycelium
d) Cap

Explanation

The mycelium is located underneath the fruiting body, in the top layer of the soil. **Mycelium in turn is made up of thread-like structures called hyphae**.

29. Match the following fungi category:

I.	Saprophytes	1. Mycorrhiza
II.	Parasites	2. Rhizopus
III.	Symbionts	3. Puccina

a) 2, 1, 3
b) 2, 3, 1

c) 1, 3, 2
d) 3, 1, 2

Explanation

Fungi are either **saprophytes** (i.e., derives nutrition from the remains of dead and decomposing plants and animals) eg. **Rhizopus**, Penicillium, Agaricus, or **parasites** (ie. derives nutrition from the living cells of the host) eg. **Puccina**, Albugo, Ustilago, or **symbionts** (i.e., fungus in the roots of vascular plant) eg. **Mycorrhiza**.

30. Which of the following statement about Algae is correct?

1) Algae are very simple plant like eukaryotic organisms.
2) Algae lack chlorophyll
3) They are known as 'grass of water'.
   a) 1, 2
   b) 1, 3
   c) 2, 3
   d) All the above

Explanation

Algae are very simple plant like **eukaryotic organisms**. Algae are found in moist habitats. **Algae are rich in chlorophyll** and can be seen as thin film on the surface of lakes and ponds, therefore they are known as 'grass of water'.

31. The study of algae is called_____

a) Mycology
b) Phycology
c) Proctology
d) Microbiology

Explanation

Algae are autotrophic and manufacture their own food with the help of chloroplast. Chloroplast contain chlorophyll (green) pigments for photosynthesis. The **study of algae** is called **algology** (**phycology**).

32. Which of the following statement about algae is correct?

1) Their size varies from 1 micron to 50 meters.
2) Unicellular algae exhibit variety of shapes (i.e., spherical, rod, spindle)
3) Algae may be unicellular, microscopic (eg. Chlamydomonas) or multicellular and macroscopic (eg. Sargassum)
   a) 1, 2

b) 1, 3
c) 2, 3
d) All the above

Explanation

Algae size varies from **1 micron to 50 meter**s. Algae may be **unicellular, microscopic (eg. Chlamydomonas)** or multicellular and **macroscopic (eg. Sargassum)**. Unicellular algae exhibit variety of shapes (i.e., spherical, rod, spindle), whereas multicellular algae are in the form of filaments and branches.

33. Which of the following statement about Chlamydomonas is correct?

1) Chlamydomonas is a simple, unicellular, motile fresh-water algae
2) They have a narrow anterior end and a broad posterior end
3) They are oval, spherical or pyriform in shape.
   a) 1, 2
   b) 1, 3
   c) 2, 3
   d) All the above

Explanation

Chlamydomonas is a simple, unicellular, motile fresh-water algae. They are **oval, spherical or pyriform in shape**. The pyriform (pear shape) is a common one found in ponds, ditches and water tanks. They have a **narrow anterior end and a broad posterior end**.

34. Match the following:

I.	Fucoxanthin	1. Red
II.	Xanthophylls	2. Brown
III.	Phycoerythrin	3. Yellow
IV.	Phycocyanin	4. Blue

a) 1, 3, 2, 4
b) 2, 3, 1, 4
c) 2, 1, 3, 4
d) 2, 4, 3, 1

Explanation

Some algae have other photosynthetic pigments like **fucoxanthin (brown)**, **xanthophylls (yellow)**, **phycoerythrin (red)**, **phycocyanin (blue)**.

35. Protozoan included under the kingdom_____

a) Monera

b) Protista
c) Bacteria
d) Fungi

Explanation

A **protozoan** (in Greek protos = first and zoon = animal) is a single-celled eukaryote. They are **included under the kingdom Protista.**

36. The study of protozoa is called_____

a) Mycology
b) Protozoology
c) Phycology
d) Protology

Explanation

The **study of protozoa is called Protozoology**. They are found in ponds, ocean, in moist soil, and in the cells and tissues of plants and animals causing diseases.

37. What is the size of Protozoa?

a) 2-200 microns
b) 2-20 microns
c) 1 – 100 metre
d) 2 – 20 milli-microns

Explanation

Protozoa range from 2-200 microns. Protozoans have specialized organelles. These organelles are used for movement, feeding, and other functions.

38. Match the following:

I.	Ciliates	1. Plasmodium
II.	Flagellates	2. Euglena
III.	Pseudopods	3. Paramecium
IV.	Sporozoans	4. Amoeba

a) 1, 2, 4, 3
b) 3, 2, 4, 1
c) 3, 4, 1, 2
d) 3, 1, 2, 4

Explanation

- **Ciliates** - presence of cilia for locomotion (e.g. **Paramecium**)

- Flagellates - presence of flagella for locomotion (e.g. **Euglena**)
- **Pseudopods** - presence of pseudopodia for locomotion (e.g. **Amoeba**)
- **Sporozoans** – parasites (e.g. **Plasmodium**)

39. Which of the following statement about Amoeba is correct?

1) Amoeba is a unicellular microscopic organism.
2) It has cell membrane, cytoplasm and nucleus.
3) Amoeba is irregular in shape.
    a) 1, 2
    b) 1, 3
    c) 2, 3
    d) All the above

Explanation

Amoeba is a **unicellular microscopic organism**. It is found in ponds. Amoeba is **irregular** in shape. It has **cell membrane, cytoplasm and nucleus**.

40. Which of the following statement is correct?

1) Amoeba is a protozoan that move by means of pseudopodia
2) Pseudopodia means false feet
3) Pseudopodia are the extended part of cell membrane
    a) 1, 2
    b) 1, 3
    c) 2, 3
    d) All the above

Explanation

Amoeba is a protozoan that move by means of pseudopodia (in Latin, "false feet.") Pseudopodia are the **extended part of cell membrane**. It helps to catch its prey (algae).

41. Amoeba reproduces by means of____

1) Fission
2) Fusion
3) Sporulation
    a) 1, 2
    b) 1, 3
    c) 2, 3
    d) All the above

Explanation

Amoeba reproduces by means of fission and sporulation. The body 'flows' around the food particle and engulfs it forming food vacuoles. Contractile vacuoles are seen in the cytoplasm that help in excretion.

42. Which of the following statement is correct?

1) The word 'Anti' means 'against'. Antibiotic is a substance produced by living organisms which is toxic for other organisms
2) Sir Alexander Fleming was the first person to discover the antibiotic Penicillin in the year 1958.
    a) **1 alone**
    b) 2 alone
    c) 1, 2
    d) None

Explanation

The word 'Anti' means 'against'. Antibiotic is a substance produced by living organisms which is toxic for other organisms. **Sir Alexander Fleming was the first person to discover the antibiotic Penicillin in the year 1928**.

43. The antibiotic Penicillin was obtained from____

a) Penicillium Streptomyces
b) **Penicillium chrysogenum**
c) Streptomyces bacteria
d) Penicillium Spiragyra

Explanation

Alexander Fleming was the first person to discover the antibiotic Penicillin in the year 1928. The antibiotic **Penicillin** was obtained from the **fungi Penicillium chrysogenum**. It is used to treat diseases such as tetanus, diphtheria.

44. Plague can be treated with which of the following anti-biotic?

a) Penicillium Streptomyces
b) Penicillium chrysogenum
c) **Streptomycin**
d) Penicillin

Explanation

Antibiotic Streptomycin is obtained from Streptomyces bacteria **to cure various bacterial infections** eg. **Plague**.

45. Which of the following statement is correct?

1) Scientists discovered a new antibiotic pseudouridimycin
2) The new antibiotic is produced by a microbe found in a soil sample collected in Italy.
3) The new antibiotic kills drug-sensitive and drug-resistant bacteria in a test tube and cures bacterial infections in mice
    a) 1, 2
    b) 1, 3
    c) 2, 3
    d) All the above

Explanation

Scientists discovered a **new antibiotic pseudouridimycin**. The **new antibiotic is produced by** a microbe found in a soil sample collected in **Italy**. The new antibiotic kills drug-sensitive and drug-resistant bacteria in a test tube and cures bacterial infections in mice.

46. Vaccines are prepared from_____

a) Dead microbes
b) Weakened microbes
c) Either a or b
d) Both a and b

Explanation

Vaccines are **prepared from dead or weakened microbes**. When the vaccine is injected to the body of a patient, the body produces antibodies to fight against the germs.

47.____ was the first person to discover small pox vaccine

a) Alexander Fleming
b) Edward Jenner
c) Max Muller
d) None

Explanation

Edward Jenner was the **first person to discover small pox vaccine**. He coined the term vaccination. vaccination is otherwise called as immunization.

48. MMR vaccine for_____

1) Measles
2) Rubella
3) Rabies

4) Mumps
    a) 1, 2, 3
    b) 1, 2, 4
    c) 1, 3, 4
    d) 2, 3, 4

Explanation

MMR vaccine for Measles, Mumps, Rubella. BCG (Bacille Calmette Guerin) vaccine for Tuberculosis.

49. Which of the following statement is incorrect?

1) Microorganisms are called as decomposers because they act upon degradable wastes.
2) During the process, nitrates and other inorganic nutrients are released into the soil, making the soil fertile
    a) 1 alone
    b) 2 alone
    c) 1, 2
    d) None

Explanation

Microorganisms are called as decomposers because they **act upon degradable wastes**. During the process, nitrates and other inorganic nutrients are released into the soil, making the soil fertile. This compost is called as **natural fertilizer**.

50. ____ bacteria living in the root nodules of leguminous plants enrich the soil by fixing the atmospheric nitrogen as nitrates

a) Cyanobacteria
b) Rhizobium
c) Pseudouridimycin
d) Penicillium chrysogenum.

Explanation

Rhizobium bacteria living in the root nodules of leguminous plants enrich the soil by fixing the atmospheric nitrogen as nitrates which are essential for the growth of plants. Some free-living bacteria in soil, cyanobacteria Nostoc can also fix nitrogen biologically.

51. Match the following

I.	Bacillus thuringiensis	1. attack insects and other arthropods
II.	Trichoderma	2. helps to control insects
III.	Baculoviruses	3. helps to protect roots and control plant pathogens

a) 1, 3, 2
b) 1, 2, 3
c) 2, 3, 1
d) 3, 2, 1

Explanation

Microbes are used to protect the crops from pests. For example,

- **Bacillus thuringiensis** (Bt cotton) **helps to control insects**
- **Trichoderma** (Fungi) helps to **protect roots and control plant pathogens**
- **Baculoviruses** (Virus) **attack insects and other arthropods**.

52. Which of the following statement is correct?

1) Aerobic microbes are allowed to grow in the primary effluent during the secondary stage of waste water treatment
2) In the anaerobic treatment of sewage Methanobacterium is used.
3) These microbes consume the major part of the organic matter in the effluent
   a) 1, 2
   b) 1, 3
   c) 2, 3
   d) All the above

Explanation

Aerobic microbes are allowed to grow in the primary effluent during the secondary stage of waste water treatment. These microbes consume the major part of the organic matter in the effluent eg. Nitrobacter sps. In the **anaerobic treatment of sewage Methano-bacterium is used**.

53. Which of the following can be used to produce methane (biogas)?

1) Human faecal matter
2) Animal faecal matter
3) Plant wastes
   a) 1, 2
   b) 1, 3
   c) 2, 3
   d) All the above

Explanation

Human and animal faecal matter and plant wastes are broken down by anaerobic bacteria to produce methane (biogas) along with carbon dioxide and hydrogen. These bacteria are called as methanogens.

54. Which of the following statement is correct?

1) Alcoholic drinks are prepared by fermentation process using yeast
2) Beer is produced by the fermentation of sugars in rice and barley
3) Sugars in grapes are fermented by using yeast
    a) 1, 2
    b) 1, 3
    c) 2, 3
    d) All the above

Explanation

Alcoholic drinks are prepared by fermentation process using yeast. Sugars in grapes are fermented by using yeast. **Beer** is produced by the **fermentation of sugars in rice and barley**.

55. Which of the following statement is correct?

1) Flax plants are tied in bundles and kept in water.
2) Bacteria loosen the supporting fibres of the stem by acting on the stem tissues.
3) This process is known as tanning
    a) 1, 2
    b) 1, 3
    c) 2, 3
    d) All the above

Explanation

Flax plants are tied in bundles and kept in water. Bacteria loosen the supporting fibres of the stem by acting on the stem tissues. **This process is known as retting**. Linen thread is made from these fibres eg. Pseudomonas aeruginosa.

56. In Tanning industry_____ act upon the skin of animals

a) Virus
b) Fungi
c) Bacteria
d) Algae

Explanation

In **Tanning industry bacteria act upon the skin of animals** and makes it soft and therefore it becomes pliable.

57. Chlorella is a_____

a) Brown algae

b) Green algae
c) Blue algae
d) Blue green algae

Explanation

Chlorella (green algae) is rich in proteins and vitamins is added to the dough which enrich the bread with nutrients.

58. _____is used in bakeries to make bread and cakes

a) Bacteria
b) Yeast
c) E. Coli
d) Fungi

Explanation

Yeast is used in bakeries to make bread and cakes. They are added to the dough to produce carbon dioxide which makes the dough rise. Bread and cakes are soft due to carbon dioxide gas.

59. _____ in the milk gets turned into Lactic acid by the action of Lactobacillus

a) Zymase
b) Lactose
c) Lipase
d) Zymase

Explanation

Lactose in **the milk gets turned into Lactic acid by the action of Lactobacillus** (bacteria). Therefore, the milk becomes thick (curd). It gives the sour taste. When curd is processed cottage cheese (panner) is obtained.

60. E. coli bacteria in human intestine help in synthesizing____

1) Vitamin K
2) Vitamin B
3) Vitamin A
4) Vitamin C

a) 1, 2
b) 2, 3
c) 1, 3, 4
d) All the above

Explanation

Lactobacillus acidophilus that lives in the human intestine helps in digestion of food and fight against harmful disease-causing organisms. **E. coli bacteria in human intestine help in synthesizing vitamin K and vitamin B complex**

61. ____ is acid-loving bacteria

a) **Lactobacillus acidophilus**
b) Lactobacillus Basophilus
c) Pseudomonas aeruginosa
d) E. coli bacteria

Explanation

Lactobacillus acidophilus are acid-loving bacteria. These are found in buttermilk, yogurt, sour cream, and frozen desserts. They convert sugar and carbohydrates into lactic acid, and hence are called "lactic acid bacteria.

62. Which of the following statement is correct?

1) A few microorganisms are harmful to humans, animals and plants.
2) Viruses causing 'flu' are spread through air
3) Pathogens enter into the body through cuts and wounds in the skin, mouth or nose and cause diseases
    a) 1, 2
    b) 1, 3
    c) 2, 3
    d) All the above

Explanation

A few microorganisms are harmful to humans, animals and plants. They cause diseases and hence they are called as pathogens. Pathogens enter into the body through cuts and wounds in the skin, mouth or nose and cause diseases. Viruses causing 'flu' are spread through air.

63. What is the mode of transmission of Tuberculosis?

a) **Through air**
b) By flies
c) Female Anopheles mosquito
d) Food water and flies

Explanation

Tuberculosis	*Mycobacterium tuberculosis* (Bacteria)	Through air and sputum of infected person	Persistent cough, blood mucus, loss of weight, breathlessness	BCG Vaccine

64. Common cold is caused by_____

a) Rhabdo viridae
b) Influenza
c) Vibrio cholera
d) Entamoeba histolytica

Explanation

Common cold	*Influenza* (virus)	Through air	Running nose, sneezing	Isolation of patient

65. Which of the following are the symptoms of Cholera?

1) Watery diarrhoea
2) Paralysis
3) Vomiting
4) Rapid dehydration

a) 1, 2, 3
b) 1, 3, 4
c) 2, 3, 4
d) All the above

Explanation

Cholera	*Vibrio cholera* (Bacteria)	By flies and by contaminated food and water	Watery diarrhoea, vomiting, rapid dehydration.	Anticholera vaccine, maintaining personal hygiene.

66. Rabies mode of transmission is_____

a) Through air
b) Animal bite
c) Food water and flies
d) Female Anopheles mosquito

Explanation

Rabies	*Rhabdo viridae* (virus)	Animal bite	Fever, hallucination, paralysis inability to swallow	Anti-rabies vaccine.

67. Which of the following are the symptoms of Amoebic dysentery?

1) Severe diarrhea
2) blood in stool
3) Nausea

a) 1, 2
b) 1, 3
c) 2, 3
d) All the above

Explanation

Amoebic dysentery	*Entamoeba histolytica* (Protozoa)	Food water and flies	Severe diarrhea and blood in stool	Proper sanitation to be followed and metronidazole antibiotic to be administered

68. Malaria is caused by_____

a) Virus
b) Bacteria
c) Protozoa
d) Fungi

Explanation

Malaria	*Plasmodium* (Protozoa)	Female Anopheles mosquito	Nausea, vomiting High fever	Antimalarial drugs like quinine, chloroquine to be taken and also usage of mosquito repellents and nets.

69. Anthrax affects____

a) Cattle only
b) Human only
c) Both a and b
d) None

Explanation

Anthrax (cattle) also affects humans	*Bacillus anthracis* (Bacteria)	Through contaminated soil and food	Difficulty in breathing, unconsciousness, loss of appetite	Anthrax Vaccine

70. Foot and mouth disease treatment is_____

a) FMD vaccine

b) Anthrax Vaccine
c) Anti-rabies vaccine
d) BCG Vaccine

Explanation

Foot and mouth disease	*Aphthovirus* (virus)	Through air and animal vectors	Fever, blisters in mouth, weight loss, decreased milk production	FMD vaccine

71. Mode of transmission for Citrus canker is_____

a) Air
b) Water
c) Either a or b
d) Both a and b

Explanation

Citrus canker	*Xanthomonas axonopodis* (Bacteria)	Air, water	Lesions on leaves, stems and fruit	Copper based bactericides can be used	

72. Potato blight disease is transmitted through____

a) Air
b) Water
c) Either a or b
d) Both a and b

Explanation

Potato blight disease	*Phytophthora infestans* (Fungi)	Air	Brown lesions on the surface of tubers	Fungicides are used	

73. African sleeping sickness is caused by_____

a) Virus
b) Bacteria
c) Protozoa
d) Fungi

Explanation

African sleeping sickness, which is **spread by the bite of the tsetse fly**, is caused by the flagellate **protozoan Trypanosoma**.

74. Which of the following micro-organism are used in food processing?

1) Yeast
2) Bacteria
3) Moulds
    a) 1, 2
    b) 1, 3
    c) 2, 3
    d) All the above

Explanation

For **food processing**, commonly used **microorganisms are yeast, bacteria, and moulds**. Fermentation process which is carried out by microorganisms results in the production of organic acids, alcohol and esters.

75. _____ is a method of preserving food in an edible antimicrobial liquid

a) Fermentation
b) Pickling
c) Boiling
d) Sugaring

Explanation

Pickling is a **method of preserving food in an edible antimicrobial liquid**.

Fermentation is the microbial conversion of starch and sugars into alcohol. It makes foods more nutritious and palatable.

76. Which of the following fruits can be preserved using Sugaring?

a) Apples
b) Pears
c) Peaches
d) All the above

Explanation

Sugar is used to preserve fruits in an antimicrobial syrup with fruit such as **apples, pears, peaches, plums** or in a crystallized form, therefore the product is stored in dry condition.

77. Who invented Pasteurization?

a) Edward Jenner
b) Louis Pasteur
c) Edward Pasteur

d) Louis Jenner

Explanation

Pasteurization is a process for preservation of liquid food. This method was **invented by Louis Pasteur in 1862**. Milk is heated up to 70°c to kill the bacteria and it is cooled to 10°c to prevent the growth of remaining bacteria. Then milk is stored in sterilized bottles in cold places.

78. Which of the following cause stomach ulcers?

a) Bifidobacterium breve
b) Helicobacter pylori
c) Bifidobacterium bifidum
d) None

Explanation

Scientists discovered a particular strain of probiotic Bifidobacterium bifidum can help to repair **stomach ulcers caused by Helicobacter pylori**. Another probiotic in this genus, Bifidobacterium breve, is useful in the treatment of childhood constipation.

79. Thousands of bacteria, fungi and other microbes that live in our___ are essential contributors to a good health

a) Liver
b) Pancreas
c) Gut
d) Small intestine

Explanation

Thousands of bacteria, fungi and other microbes that live in **our gut are essential contributors to a good health**. They break down toxins, manufacture some vitamins and essential amino acids and form a barrier against invaders

80. Which of the following statement is correct?

1) Gut microbes are the bacteria in human gut.
2) Gut ensures that the body is absorbing all the important nutrients, to function at its highest level.
    a) 1 alone
    b) 2 alone
    c) 1, 2
    d) None

Explanation

Gut microbes are the bacteria in human gut. It is one of the most important allies in our overall health and well-being. Gut ensures that the body is absorbing all the important nutrients, to function at its highest level. **Many different aspects of health are attached to it.**

81. The word prion is derived from_____

a) **protinaceous infectious particle**
b) protein infectious particle
c) prolacte infectious particle
d) none

Explanation

The word **prion** is derived from "**protinaceous infectious particle**". Prions have neither DNA or RNA to transmit infection. A prion is a mutted form of a usually harmless protein. Prions cause diseases by affecting brain or neural tissue

82. Which of the following statement is correct?

1) Virion is an entire virus particle consisting of an outer protein shell called a capsid and an inner core of nucleic acid
2) Virion has the capacity to infect the living tissue.
3) If the virus is found outside the cell (extracellular) it is known as virion
    a) 1, 2
    b) 1, 3
    c) 2, 3
    d) All the above

Explanation

Virion is an entire virus particle consisting of an **outer protein shell called a capsid** and an inner **core of nucleic acid (RNA or DNA).** If the virus is found outside the cell (extracellular) it is known as virion. **Virion** has the capacity to **infect the living tissue**.