

Answers:

Very Short Answer Type Questions

1. A disease can be defined as any condition that may lead to discomfort, distress, health problems, or death of the affected person.
2. The pathogen is defined as living organisms which cause disease.
3. Tuberculosis, measles, and Influenza.
4. AIDS, Polio
5. Diseases which are present since birth are called congenital disease. For instance, hole in the heart of an infant
6. Mosquito, *Aedes aegypti*
7. Oral Rehydration Solution
8. Health is defined as the state of complete physical, social and mental well-being.
9. Symptoms are evidence of the presence of diseases.
10. Antibiotics are drugs which can block the biochemical life processes of bacteria without harming human cells.
11. AIDS and Syphilis
12. Tuberculin
13. Diseases that last for a longer period are called *chronic diseases*.
14. Jaundice and Typhoid
15. a- DPT- diphtheria Pertussis Tetanus,

b- AIDS- Acquired Immunodeficiency Syndrome

c- HIV- Human Immunodeficiency Virus

16. Polio
17. Tuberculosis, Typhoid
18. Protozoans are simple, primitive unicellular organisms.
19. *Amoeba*, *Trypanosoma*, and *Leishmania*.
20. AIDS
21. Dengue and Malaria
22. A vector is an organism which harbours a pathogen and may pass it on to another person to cause a disease. Example, Mosquitoes harbour malarial parasite and transmits it to humans.
23. Edward Jenner
24. Rabies

Answer:

Short Answer Type Questions

1. The health of all organisms depends on their surroundings or their environment. The environment includes the physical environment or social environment.
2. It is necessary to collect garbage regularly because if garbage is not collected and drains are not cleaned; pests and vectors might breed in the area resulting in the spread of disease.
3. Good economic condition and job are essential for maintaining good health of an individual. This enables an individual to consume wholesome balanced diet, which is very much required for keeping everyone in the family healthy.
4. The various means of spread of diseases are Air borne, waterborne, foodborne, vector-borne, and direct contact.
5. Infectious diseases are caused by microbes, which can move from one person to another in different ways. As these diseases can be communicated from one person to another, they are called communicable diseases.
6. Some of the symptoms that indicate that a person is suffering from an ailment are a cough, headache, loose motions and a wound with pus. These may indicate that the person is suffering from a disease, but they don't indicate the exact disease.
- 7.

Communicable disease

1. A disease that can be transmitted from diseased person to healthy person is called communicable disease.
2. Transmission of disease occurs through direct contact or some medium (air, food, water)
3. E.g. Cholera, Tuberculosis etc.

Non-communicable disease

- Disease that cannot be transmitted from one person to another is called non-communicable disease.
- Transmission of disease by contact is absent.
- E.g. Cancer, obesity etc.

8.
 1. Viruses: Common cold, Dengue, AIDS
 2. Bacteria: Typhoid, Cholera, Tuberculosis
 3. Protozoan: Malaria, kala-azar
 4. Fungi: Ringworm
9. The antibiotic, *penicillin* inhibits the enzymes that are involved in the formation of bacterial cell wall. As a result of the weakened cell wall, the immune cells such as white blood cells enter into the bacterial cell and causes cell lysis. **Cell lysis** is the process of destruction of cells such as blood cell and bacteria.
10. **There are two ways to treat a disease:**
 1. One would be to reduce the effects of the disease.
 2. Other, is to kill the cause of the disease.
11. **There are two ways to prevent diseases:**
 1. One general way, i.e. by preventing exposure to microbes

2. Other specific ways that include preparing vaccines for a specific disease and administering to the individual.
12. Malaria: *Plasmodium* and Amoebic dysentery: *Entamoeba histolytica*
13. Viruses have very few biochemical pathways of their own, and that is the reason why antibiotics do not work against viral infections. If we have a common cold, taking antibiotics does not reduce the severity or the duration of the disease. However, if we also get a bacterial infection along with the viral cold, taking antibiotics will help. Even then, the antibiotic will work only against the bacterial part of the infection, not the viral infection.
14. A peptic ulcer is caused by *Helicobacter pylori*.
 1. Robin Warren and Barry Marshall discovered the pathogen of peptic ulcers for the first time.
15. **Acute diseases:** Diseases that last for only a short period of time is known as *acute diseases*. However, they spread rapidly in the body showing intense symptoms. They can be mild, severe, or fatal. *Examples* are cold, cough, influenza, typhoid etc.

Chronic diseases: Diseases that last for a longer period are called *chronic diseases*. They can also be mild, severe, or fatal. They do not spread rapidly; instead, they develop slowly over a period of time. *Examples* are tuberculosis, cancer, diabetes, kidney stones etc.

16. Two methods by which she might have contacted the disease are:
 1. Sexual contact with the affected person.
 2. Transfusion of blood contaminated with human immunodeficiency virus.

Organ affected by this disease is lymph nodes all over the body.

17. **Modes of transmission of AIDS are:**
 1. Sexual contact with the affected person. In India, the most common route of HIV transmission is through unprotected sex.
 2. Using the same syringe as that of the affected person.
 3. Transfusion of blood contaminated with human immunodeficiency virus.
 4. From mother to newborn baby during pregnancy or during birth.
18. The signs and symptoms of a disease will thus depend on the tissue or organ which the microbe targets. If the lungs are the targets, then symptoms will be a cough and breathlessness. If the liver is targeted, there will be jaundice. If the brain is the target, we will observe headaches, vomiting, fits or unconsciousness.
19. The immune system of our body is normally fighting off microbes. We have cells that specialise in killing infecting microbes. These cells go into action each time infecting microbes enter the body. If they are successful, we do not actually come down with any disease. The immune cells manage to kill off the infection long before it assumes major proportions.
20. There are vaccines against tetanus, diphtheria, whooping cough, measles, polio and many others.
21.
 1. House and surroundings should be clean.

2. The infected person should be kept isolated in a separate room.
 3. Clothes and utensils should be sanitised regularly.
 4. Separate towels and handkerchiefs should be used by the patient.
 5. Children should not be allowed to visit the infected person.
22. Acute diseases are severe but last for short duration. These do not cause a long-term bad effect on human health. While the chronic diseases are long last lasting and have drastic long-term effects on patients health.
23. Polio
24. Pulse Polio Programme.

Answers:

1. Infectious diseases are transmitted from diseased person to healthy person by means of infectious agents. So if we prevent the entry of the disease-causing pathogens i.e. infectious agents into our body, then we may prevent the disease from occurring, instead of curing the disease after suffering from it. This means prevention of disease is better than cure.

Precautions to be taken to prevent the occurrence of diseases are:

1. Taking of balanced diet by an individual.
2. Maintaining proper hygienic and sanitary conditions.
3. Health education and awareness about diseases among masses.
4. Taking safe drinking water and clean air etc.

2. On the basis of duration, a disease can be classified into two broad categories:

a.Acute diseases: Diseases that last for only a short period of time is known as *acute diseases*. However, they spread rapidly in the body showing intense symptoms. They can be mild, severe, or fatal. *Examples* are cold, cough, influenza, typhoid etc.

b.Chronic diseases: Diseases that last for a longer period are called *chronic diseases*. They can also be mild, severe, or fatal. They do not spread rapidly; instead, they develop slowly over a period of time. *Examples* are tuberculosis, cancer, diabetes, kidney stones etc.

3.A disease can be prevented by two ways:

a.General ways of preventing infectious diseases: These include *preventing the spread of a disease*:

Airborne diseases can be prevented by:

- Staying away from the diseased person.
- Wearing a mask when you need to contact a diseased person.
- Covering your mouth and nose while coughing or sneezing to prevent the spread of the disease.

Waterborne diseases can be prevented by:

- Ensuring proper disposal of sewage.
- Ensuring safe drinking water supply.

Vector-borne diseases can be prevented by:

- Providing a clean environment, which helps in preventing vectors like mosquitoes from breeding
- Availability of proper nutrition. If proper and sufficient nutrition is not available, the immune system of the body will not function properly.
- **Specific ways of preventing diseases:** It refers to the defence provided by the immune system of a person. Vaccination is a specific way of preventing diseases.

4.

a. A balanced diet contains the entire nutrient required for maintaining proper health as well as needed for growth and repair. Lack of single nutrient causes deficiency diseases.

b. Surrounding environmental conditions plays an important role in the maintenance of health.

For example, we feel depressed if surroundings are dirty or polluted, garbage is not collected or disposed of, drains are not cleaned and water collects in the streets or open spaces.

This unclean surrounding causes the entry of germs via air, water, food or vectors and makes the person unhealthy.

c. Stagnant water provides a breeding ground for several insects especially mosquitoes. Mosquito acts as a vector for several diseases like malaria, dengue etc. So, if we keep our surroundings clean and free from stagnant water, then these vectors will not find any place for breeding and automatically their population will decrease. This, in turn, will prevent the spread of insect-borne diseases.

5.Diseases can spread through the following means:

a. By air: A number of disease-causing microbes spread through the air. The pathogens may reach the body through little droplets throughout when an infected person sneezes or coughs. A healthy individual standing nearby can inhale these droplets, causing infection in that person. Diseases spreading through the air are Common cold, Pneumonia, Tuberculosis, Diphtheria etc.

b. By water and food: Consumption of the contaminated water and food leads to the spread of diseases. *Some water and foodborne diseases are* cholera, typhoid, hepatitis A, Jaundice, Diarrhoea etc.

c. Direct physical contact: Sexual act involves close contact between two people, which leads to the transfer of diseases such as syphilis, gonorrhoea, AIDS, etc. These diseases are known as *sexually transmitted diseases*.

d. Blood to blood contact: This type of contact is established through blood transfusion or during pregnancy (between mother and baby) and through breastfeeding. An example includes AIDS.

6. Modes of transmission of diseases are bacteria, viruses, protozoan, helminths and fungi.

a. Bacteria: Example, Typhoid, cholera, anthrax, tuberculosis etc. are some human diseases caused by bacteria.

b. Viruses: Example, Polio, AIDS, Chickenpox are some human diseases caused by viruses.

c. Fungi: Example: Athlete's foot, ringworm, etc. are some human diseases caused by fungi.

d. Protozoa: Example, Amoebiasis, kala-azar, malaria, African sleeping sickness, etc. are some diseases caused by protozoa.

e. Worms: Example, Diarrhoea, anaemia, liver rot, etc. are some diseases caused by worms.

7. Malaria:

Pathogen: Malarial parasite, *Plasmodium*

Mode of transmission: By bite of female *Anopheles* mosquito. Male *Anopheles* mosquito feed upon plant juices.

Symptoms:

- A headache, nausea and muscular pain
- Feeling of chill and shivering followed by a fever which becomes normal along with sweating after some time.
- The patient becomes weak, exhausted and anaemic.
- Malaria may secondarily cause enlargement of liver and spleen.

Prevention and Cure:

- Wire-gauzing of doors, windows etc to check the entry of mosquitoes.
- Use of mosquito net and mosquito repellents.

- Taking care of coolers, flower pots and uncovered water containers to prevent breeding of mosquitoes.
- A sprinkling of kerosene oil in ditches or other open spaces where water gets collected.
- All the mosquito breeding places like ponds and ditches should be destroyed or covered.
- Use of insect repellants to prevent mosquito bite.