

Question Bank

Health, Diseases and Hygiene

1. Define 'disease'.

Ans. The word 'disease' literally means lack of ease or comfort. It is departure from state of health. Diseases are generally characterised only when they produce significant changes or symptoms like pain, fever and weakness. Disease is thus defined as a condition in which bodily health is affected and performance of vital functions is disturbed.

2. List the causative factors of diseases.

Ans. Causative factors of diseases

- (i) **Biological** (viruses, bacteria, fungi, protozoa, helminths, etc.);
- (ii) **Nutrients** (proteins, carbohydrates, fats, minerals and vitamins);
- (iii) **Chemicals** (a) Endogenously formed (urea, uric acid); (b) Exogenous (pollutants, spores, pollen);
- (iv) **Physical** (temperature, humidity, pressure, radiation, sound);
- (v) **Mechanical** (friction, trauma, fractures, sprains);
- (vi) Absence, insufficiency or excess of a factor (like hormones, enzymes) also causes disease.

3. Differentiate between infectious and non-infectious diseases.

Ans. (i) Infectious diseases are caused by infection of a pathogen or microbe into the body of the host, whereas non-infectious diseases are not caused by any pathogen.

(ii) Infectious diseases are communicable diseases, while non-infectious diseases are non-communicable.

(iii) Example of infectious diseases (caused by bacteria, virus, protozoa, helminths and fungi) — diphtheria, tetanus, mumps, AIDS, malaria, filariasis, ringworm.

Examples of non-infectious diseases – rickets, scurvy, asthma, hay fever, atherosclerosis.

4. Explain the different types of non-infectious diseases, giving one example of each type.

Ans. Types of non-infectious diseases

- (i) **Degenerative diseases** caused by malfunctioning of vital organs such as lungs, heart and central nervous system. **Examples** – Atherosclerosis, baldness.
- (ii) **Deficiency diseases** caused by the deficiency of one or more nutrients. **Examples** - Rickets, scurvy.
- (iii) **Allergies** caused by the hypersensitivity of the body to certain substances. **Examples** - Asthma, hay fever.
- (v) **Social** diseases such as alcoholism and drug addiction.

5. List the different ways by which diseases are transmitted.

Ans. Transmission (Spread) of Diseases

There are two broad modes of transmission — direct and indirect.

(A) Direct Transmission (Pathogen transmitted from an infected person to a healthy person directly without any intermediate agents).

- (i) Direct contact with an infected person, e.g., chicken pox, small pox, measles.
- (ii) Droplet infection : Sneezing, coughing, spitting and talking spread the disease, as in diphtheria, influenza, common cold.
- (iii) An open wound's contact with soil as in tetanus.
- (iv) Animal bites, as in rabies.
- (v) Transplacental transmission, from mother to foetus, as in German measles.

(B) Indirect transmission (through some intermediate agents)

- (i) By **carriers** or **vectors**, for example, sandfly (*Phlebotamus*) is the vector for kala-azar, female *Anopheles* is the vector for malaria.
- (ii) Transmission through agents like ice, water, food and blood, for example, AIDS.
- (iii) **Air-borne**, as in epidemic typhus.
- (iv) Transmission through contaminated articles such as garments, crockery, toys, soap, utensils, surgical instruments and door handles.
- (v) **Unclean hands and fingers**, as in diseases like Ascariasis.

6. What are pathogens? How do these cause diseases in the human beings?

Ans. Biological disease-causing agents like bacteria, viruses, fungi and worms are called pathogens. The pathogens causes infection in human beings after gaining entry into the body. Pathogens can enter our body in the following ways :

- (i) Through the air we inhale,
- (ii) Through the water we drink, and the food we eat,
- (iii) Through skin.

Diseases are transmitted or spread from an infected person to a healthy person in different ways.

7. List three diseases caused by each of the following microorganisms :

- (i) Viruses (ii) Bacteria (iii) Protozoans (iv) Worms.

Ans. Diseases caused by :

- (i) **Viruses** : mumps, AIDS, measles, chickenpox, poliomyelitis and trachoma.
- (ii) **Bacteria** : tuberculosis, diphtheria, whooping cough (pertussis), cholera, leprosy, tetanus, gonorrhoea, syphilis and diarrhoeal diseases.
- (iii) **Protozoans** : malaria and amoebiasis.
- (iv) **Helminths (worms)** : filariasis, ascariasis and taeniasis.

8. List the symptoms and preventive measures of the following diseases :

- (i) Mumps (ii) Chickenpox (iii) Tuberculosis
(iv) Cholera (v) Filaria.

Ans.

Disease	Symptoms	Preventive measles measures
Mumps	Painful enlargement of parotid salivary glands; movements of jaw becomes difficult.	Mumps vaccine isolation
Chickenpox	Dark red coloured rash or pox changing into vesicles, crusts and falling.	No vaccine
Tuberculosis	Coughing, chest pain and bloody sputum with tuberculin, loss of body weight.	BCG vaccine
Cholera	Acute diarrhea, vomiting and dehydration.	Sanitation, boiling of water and cholera vaccine.
Filaria	Unusual enlargement of certain body parts like legs; fever.	Eradication vector vector.

9. What is DPT vaccine? What for is it given to the children?

Ans. DPT vaccine is a triple vaccine (diphtheria-pertussis-tetanus) used for immunizing children simultaneously for three diseases — diphtheria, tetanus and whooping cough.

10. How do the following diseases spread?

- (i) Cholera (ii) Influenza (iii) Tuberculosis
(iv) Taeniasis

Ans. Spread of Cholera (caused by a bacterium)

- (i) Through contaminated food and water.
(ii) Flies may carry the infected wastes to foods and water consumed by healthy persons.

Spread of Influenza (caused by a virus)

By discharges from nose and throat.

Spread of Tuberculosis (caused by a bacterium)

By air, dust, sputum of infected persons.

Spread of Taeniasis (caused by tapeworm)

From under-cooked pork which harbours tapeworm in bladder – worm stage.

11. Name the diseases caused by the following :

- (i) By mites
(ii) By fungi
(iii) By insect-bite.

Ans. Diseases caused by mites : Scabies

Diseases caused by fungi : Ringworm, athlete's foot.

Diseases caused by insect-bite : Malaria, filaria, plague.

12. Explain the following terms :

- (i) Pathogen (ii) Disease (iii) Vaccine (iv) Antibody
(v) Hygiene (vi) Vector.

Ans. Pathogen : Disease causing biological organisms (bacterial, virus, protozoa, fungi and worms) are called pathogens.

Disease : Disease is defined as a condition in which bodily health is affected and performance of vital functions is impaired.

Vaccine : A vaccine is a suspension of disease-causing pathogen which when injected into the body stimulates the production of antibody, providing immunity against diseases.

Antibody : A antibody is a protein molecule produced inside the body to neutralise the effect of an antigen. It protects the body against pathogens.

Hygiene : It is the science of health and prevention of diseases. Hygiene includes all factors which contribute to healthy living.

Vector : A vector is a carrier of a specific microbe of a disease without showing any signs of the disease itself but can infect other organism.

13. Explain how do each of the following animals spread the diseases and how they can be controlled :

(a) House fly (b) Rats (c) Mosquito (d) Cockroaches

Ans. (a) House fly

Houseflies are very common among all the disease carriers and occur in abundance in places which lack sanitation. They carry germs of diseases from the infected person's stool or vomit discharge to the food and drinks of a healthy person and thus spread the disease.

Diseases like cholera, typhoid and amoebiasis are spread through houseflies.

Control :

- (i) Food must be kept covered.
- (ii) Proper sanitation in the kitchen should be maintained.
- (iii) Insecticides should be sprayed.
- (iv) Garbage should be discharged properly. Before discharge, waste material should be kept in a closed bin.

(b) Rats

Rats cause considerable damage to grains and household materials, and spread diseases like plague and typhus fever. Bacteria causing plague are transmitted by rat fleas, which are external parasites on rats. After the rats die, the fleas attack man and carry on the infection.

In addition, rats directly spread different diseases by contaminating food with the germs which they pick from dirty places.

Control :

- (i) Food materials must be kept covered.
- (ii) Cereal grains must be stored in rat-proof bins.
- (iii) Chemicals like zinc phosphide to kill rats may be used.

(c) Mosquito

Malaria in man is spread by *Anopheles* mosquito, while filaria is spread by *Culex* and yellow fever by *Aedes*. The disease-germs are spread when the mosquitoes bite to suck blood. If a person is infected, the germs enter the mosquito with the blood. When such mosquitoes bite a healthy person, the germs are introduced into his body. This chain reaction continues.

Control :

- (i) Spraying insecticides to kill mosquitoes during its developmental stages.
- (ii) Elimination of small ponds and puddles to prevent breeding of mosquito.
- (iii) Spraying of kerosene on the surface of water to form a thin film and thus block O^2 ; this kills larvae and pupae.
- (iv) Biological control by introducing certain fish (*Gambusia*) in the ponds; this fish eats mosquito larvae.

(d) Cockroaches

Cockroaches are abundant in places where darkness, warmth, dampness occur. They are commonly found in kitchens, storehouses, restaurants, manholes and sewers.

Cockroaches spread dysentery, diarrhoea, typhoid, cholera etc.

Control :

- (i) Spraying with DDT or other insecticides.
- (ii) Maintaining proper cleanliness of dark and damp places.

14. List the methods available for treatment and prevention of malaria.

Ans. Treatment of Malaria

- (i) Drugs like quinine, chloroquine and quinacrine destroy the parasite in the host.
- (ii) Vaccines inhibit different stages in the parasite's life cycle.

Prevention of Malaria

(a) Destroying the mosquito vector :

- (i) Draining marshes, ponds and ditches prevents the female mosquito from laying eggs, and the eggs from developing into larvae.
- (ii) Spraying insecticides onto the water's surface kills mosquito larvae and pupae.
- (iii) Introducing fish which eat mosquito larvae (an example of biological control).

(b) Preventing contact between mosquitoes and people

- (i) Bed nets soaked with insecticide protect people while they are asleep.
- (ii) Chemical repellent sprayed on the skin and clothes deters mosquitoes from landing on the body.

15. Explain what do you understand by personal hygiene?

Ans. Personal Hygiene

Personal hygiene, that is, taking care of one's own body, is the first step in the prevention of diseases. **Cleanliness, healthy habits, physical exercise and tension-free life style**, and proper rest and sleep form major aspects of personal hygiene.

Cleanliness : Personal cleanliness is most essential. This involves care of the skin, hands, hair, teeth, eyes, ear, nose etc. Regular daily bath keeps the skin clean and free of germs. Body odours due to perspiration are prevented. In additions to a bath, deodorants can be used for underarms. The deodorants kill the bacteria that collect there due to humidity. Similarly, under-garments must be changed and washed daily to prevent breeding of microbes.

Hands come in contact with a variety of objects every day which are potential sources of infection. Hands are used for carrying out various works, including eating. The hands, therefore, must be cleaned thoroughly with soap before eating, and before bringing them in contact with eyes, nose and ear. Besides hands, nails need special attention.

Hair should be kept clean and free from parasites such as lice by regular washing and combing.

Teeth should be thoroughly brushed everyday in the morning and again before going to bed to prevent **dental caries** (tooth decay) and **bleeding gums**. Fluoride tooth-paste should be used for brushing. Sweets and other sugary items should be consumed in limited quantities.

Eyes commonly get affected with trachoma and conjunctivit. These eye problems spread through contamination with hand and personal articles like handkerchiefs and towels. Thorough and regular washing with clean water is must to overcome these problems.

Similarly, nose and ear must be kept clean to avoid accumulation of dirt in these organs.

Healthy Habits : A number of habits which help to keep a person healthy should be adopted. Some of these habits include -

- (i) Going to bed at a fixed time and getting up early.
- (ii) Taking food at regular hours.
- (iii) Regular bowel movement.
- (iv) Avoiding indiscriminate spitting at public places.
- (v) Smoking, drinking alcohol and consumption of drugs should be avoided.

Physical Exercise : Regular exercise improves circulation of blood and delays the problems associated with old age. Muscles remain active and well-toned. Incidence of heart attacks and strokes is greatly reduced.

Rest and Sleep : Adequate sleep and rest are essential for the body. One feels fresh and full of vigour after undergoing adequate sleep.

Besides personal hygiene, an individual must keep the environment (water, air and food) in which he lives clean and free from germs. The living rooms must be well-ventilated for fresh air and sunlight.

16. Personal cleanliness and cleanliness of the surroundings are important to good health. Give reasons.

Ans. Personal cleanliness and public hygiene are important as they help us

- (i) to prevent diseases
- (ii) to increase lifespan
- (iii) to improve health standards

17. What is the importance of keeping hair, teeth and finger nails clean? How would you keep them clean?

Ans. See answer to Q.15 above.

18. What steps would you undertake to maintain social hygiene?

Ans. A number of steps need to be undertaken to ensure effective social hygiene. Some of these steps are listed below :

- (i) Provision of clean drinking water.
- (ii) Proper disposal of sewage and proper sanitation.
- (iii) Prevention and control of communicable diseases by
(a) vaccination, and (b) medical aid and medicines.
- (iv) Prevention of air - and water pollution.
- (v) Providing green air spaces to check pollution and make fresh air available.
- (vi) Providing nutrition-education at community level.
- (vii) Providing family welfare education.
- (viii) Providing school health education.