1. **Define 'disease'**.

Ans: 'Disease' literally means departure from normal health through structural or functional disorder of the body. Generally characterized by symptoms like pain, fever and weakness. Disease is 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, helminthes, 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 noninfectious diseases are not caused by any pathogen.

(ii) Infectious diseases are communicable diseases, while noninfectious diseases are non-communicable

(iii) Example of infectious diseases (caused by bacteria, virus, protozoa, helminthes 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 are 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.

(iv) Social diseases such as alcoholism and drug addiction.

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

Ans: 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) Trans placental transmission, from mother to foetus, as in German measles

B. Indirect transmission (through some intermediate agents)

(i) By carriers or vectors, for example, Sandfly (Phlebotomies) 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.

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

Ans: Diseases caused by:

(i) Viruses: mumps, AIDS, measles, chickenpox, poliomyelitis and trachoma.

(ii) Bacteria: tuberculosis, diphtheria, whooping cough (pertussis), cholera, leprosy, tetanus, gonorrhea, syphilis and diarrhoeal diseases.

(iii) Protozoans: malaria and amoebiasis.

(iv) Helminthes (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

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 of vector (mosquitoes)

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:

(i) Spread of Cholera (caused by a bacterium)
Through contaminated food and water.
Flies may carry the infected wastes to foods and water consumed by healthy persons.

(ii) Spread of Influenza (caused by a virus) By discharges from nose and throat.

(iii) Spread of Tuberculosis (caused by a bacterium) By air, dust, sputum of infected persons.

(iv) 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, filarial, 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: An 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. 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 repellant sprayed on the skin and clothes deters mosquitoes from landing on the body.