



**Mentor Guru**

**Class 12 – Biology**

**Chapter 7 – Human Health and Diseases**

**Very Short types question with answer**

**Q.1. State with examples why a few pathogens are organ/tissue-specific.**

**A.1.** Lymph nodes – HIV, Filariasis Lungs – Pneumonia

**Q.2. When the ELISA test was conducted on an immune-suppressed person, he tested positive for a pathogen.**

**(a) Identify the disease the patient is suffering from.**

**(b) Name the causative entity.**

**(c) Mention the cells of the body that are attacked by the pathogen.**

**A.2.**

**(a)** The patient is suffering from AIDS

**(b)** It is caused by the Human Immunodeficiency Virus(HIV)

**(c)** It affects a type of white blood cells called CD4 cells

**Q.3. Mention the site in the body where the B-cells and T-cells are formed.**

**Give one difference between them.**

**A.3.** Both the B-cells and T-cells are formed in the bone marrow. They differ in the site of maturation. B-cells mature in the bone marrow whereas the T-cells mature in the thymus.

**Q.4. One of the following is not a matching pair of the pathogen and the disease they cause. Pick the odd one out and state why.**

(a)Virus	Common cold
(b)Salmonella	Typhoid
(c)Microsporium	Filariasis
(d)Plasmodium	Malaria

**A.4.** Option (c) is matched incorrectly. Fungi that belong to the genera Microsporium, causes **ringworm** that are infectious diseases in man.

**Q.5. How would a person's immune system be affected in the absence of the thymus gland?**

**A.5.** T-Lymphocytes in our body mature in the thymus gland. If the thymus gland is removed from the body, T-Lymphocytes will fail to mature causing the immune system to not develop. Thus, the person turns susceptible to most of the diseases.

**Q.6. List the preventive barriers that protect the body against microbial bacteria entering the gut through the food consumed. Name the immunity type observed in this case.**

**A.6.** Following are the barriers:

- Lysozyme present in the saliva
- Presence of acid (HCl) in the stomach
- Mucous coating the epithelial lining in the gut

Innate immunity is observed here.

**Q.7. State the significance of mother's milk to a new-born infant.**

**A.7.** Mother's milk is considered essential because of the presence of the colostrum which is a yellowish fluid secreted by the mother in the initial days of lactation. It has antibodies(IgA) in abundance which is crucial in protecting the infant from picking up infections.

**Q.8. What is interferon? How do they monitor the infection of new cells?**

**A.8.** Virus-infected and tumour cells secrete glycoproteins which protect the non-infected cells from pathogen's attack, they are known as interferons. Interferons activate macrophages which are natural killer cells, prevent viral replication. They increase antigen presentation to lymphocytes which constantly multiply to eliminate foreign bodies.

**Q.9. Mention four withdrawal symptoms exhibited by an alcohol or drug addict.**

**A.9.** Shakiness, anxiety, sweating and nausea.

**Q.10. Why is it recommended to avoid crowded and closed air-conditioned places during changing the weather?**

**A.10.** It is because pathogens are most active in moist conditions and favour their growth. One can easily get affected as the body is getting adapted to the fluctuating ambient temperature and humidity making them susceptible to diseases.

**Q.11. What is the role of lymph nodes in our immunity response?**

**A.11.** Lymphocytes present in the lymph nodes prevent microbes or antigens from entering through the tissue and lymph fluid by filtering out, disposing and immobilizing pathogens.

**Q.12. State why an antibody is represented as H<sub>2</sub>L<sub>2</sub> .**

**A.12.** Antibodies are Y shaped structures with two chains, four peptide- two light chains (**L<sub>2</sub>**) and two heavy chains (**H<sub>2</sub>**), hence the representation.

**Q.13. What does 'memory' associated with immune system mean?**

**A.13.** Our body appears to have a memory of the first encounter it had with a pathogen which stimulated an immune response by generating antibodies. This response is intensified during the secondary response which is elicited by memory T-cells, B-cells which are ready to attack in case the same pathogen reappears in the future.

**Q.14. Name the infection and its causative if a patient is prescribed the Anti Retroviral therapy.**

**A.14.** The disease is AIDS and its causative is HIV.

**Q.15.What is pathology?**

**A.15.**The word pathology refers to the study of the causes and effects of diseases.

**Q.16.What are Noncommunicable diseases?**

**A.16.**Noncommunicable diseases are also referred to as chronic diseases, which are long-lasting and are caused by inherited genetic abnormalities.

**Q.17.What is Epidemiology?**

**A.17.**Epidemiology is the branch of medicine, which deals with the causes of diseases, mode of transmission, precautions of diseases and other factors relating to health and diseases.

**Q.18.What is Deficiency Diseases?**

**A.18.**The group of diseases produced by the deficiency of nutrients, vitamins, minerals, and hormones are collectively called deficiency diseases. Kwashiorkor, night blindness, goitre, anaemia, diabetes, scurvy are a few examples of deficiency diseases.

**Q.19.What are immunity and different types of immunity?**

**A.19.** Immunity is defined as the ability of the body to protect against all types of infectious diseases by defending against disease-causing pathogens like bacteria, virus, fungi and other toxic substances from invading our body. There are two types of immunity:

1. Innate Immunity or Natural
2. Acquired Immunity

**Q.20. Define Antigens and Antibodies.**

**A.20. Antigens**—They are the large molecules of proteins and polysaccharides present on the surface of cells. These molecules function by triggering the production of antibodies by inducing an immune response.

**Antibodies**— They are proteins produced by the immune system, which functions by defending the host against foreign invasion.