



Blue Print (As per PU Board)

Topic	1 mark questions	2 marks questions	3 marks questions	5 marks questions	Total Marks
Human Health And Disease	3	-	3	2	22

One mark questions

- Name the plant from which cocaine is extracted**
Answer: Erythroxyllum Coca.
- What is metastasis?**
Answer: Spreading of tumour cells to different parts of the body through circulatory system or blood.
- What is an interferon?**
Answer: Antiviral protein produced from virus infected cells is called interferon.

Two marks questions

- What is auto immunity? Mention an example.**
Answer: It is an abnormal immune response, in which the immune system of the body starts destroying its own cells and molecules
Examples: Rheumatoid arthritis
- Differentiate between Innate and Acquired immunity Any two points**
Answer:

Innate Immunity		Acquired Immunity	
1.	It is present from birth	1.	It develops after birth by vaccination or contracting The disease
2.	It is non-specific	2.	It is pathogen specific
3.	It is heritable and remains throughout the life	3.	It is non-heritable and lasts for a short period

- Differentiate Active and passive Immunity. Any two differences**

Active Immunity		Passive Immunity	
	This is the naturally acquired immunity produced in the host body in response to an antigen		When readymade antibodies are provided to an individual to protect against foreign agents.
	Immunization and body naturally getting immune to a microbe that had caused infection previously		Colostrum's present in mother's milk contain IgA

Three marks questions

- What are opioids and cannabinoids, with an example**
Answer: Drugs bind to specific opioid receptors present in our nervous system and gastro intestinal tract, extracted from papaver somniferum (opium) plant called opioids
Example: opioids Morphine, Heroine
The group of chemicals interacts with cannabinoid receptors in the brain, extracted from cannabis sativa plant called cannabinoids
Example: Marijuana, hashish, charas, ganja etc
- What is innate immunity? Explain different barriers of innate immunity?**
Answer: Innate immunity is present from the time of birth. It is non-specific.



Physical barriers: Skin and mucus coating of respiratory gastrointestinal and urogenital tract prevents entry of microbes to body

Physiological barriers: acid in the stomach, saliva in mouth, tears from eyes

Cellular barriers: Blood has leukocytes such as polymorpho nuclear leukocytes, monocytes and tissue has macrophages which phagocytose the microbes

Cytokine barriers: Special proteins called interferon are secreted by virus infected cells that prevent the further spread of infection.

9. **What are carcinogens? Mention any two types of carcinogens.**

Answer: the agents causing cancer are called carcinogens there are three groups of carcinogens as physical chemical and biological carcinogens

Answer: Physical carcinogens: Ionising radiations like X-rays and gamma rays and non-ionising radiations like uv radiations.

Chemical carcinogens: Tobacco, Smoke, Industrial chemicals like vinyl chloride, arsenic, nickel compounds, AZO dyes etc

Biological carcinogens: The viruses causing cancer called oncogenic viruses with oncogenes.

Example: Rous sarcoma viruses (RSV) cause food cause

Human papilloma virus (HPV) cause cervical cancer

Cellular oncogenes (c-one) or proto oncogenes have been identified in normal cells, activated under certain conditions leads to oncogenic transformation of cells

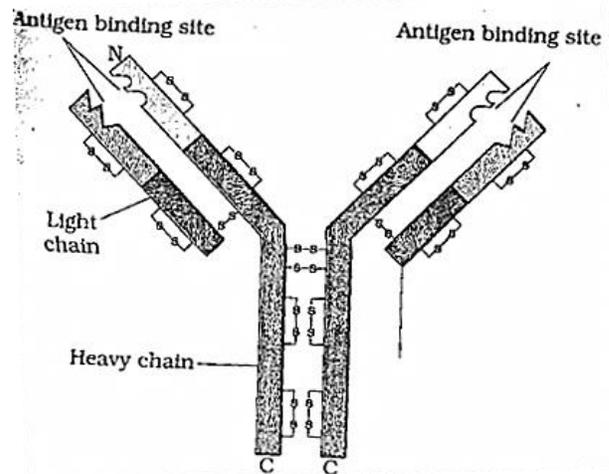
Five marks questions

10. **Describe the structure of antibody with neat labelled diagram**

Answer: Structure of antibody (Immunglobulin or Ig) each antibody molecule in "Y" shaped with four peptide chains, two small chains called light chains and two longer called heavy chains. Hence an antibody is represented as H₂L₂

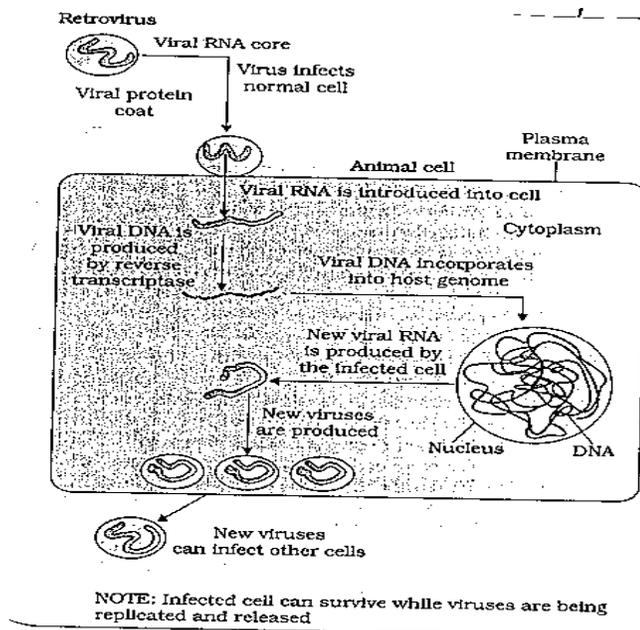
The peptide chains are held together by disulphide bonds. Each peptide chain consists of one constant region (c) and one variable region (v) there are two antigen binding sites or prongs in each antibody.

There are five different types of antibodies as IgA, IgD, IgM, IgE, and IgG. IgG is most abundant antibody that can be pass through placenta. These antibodies are responsible for humoral response.



11. **Describe replication of HIV with schematic representation of the life cycle of HIV**

Answer: Multiplication of HIV or replication of retrovirus: The virus enters into Macrophages after getting into the body of the person. RNA genome the virus replicates to form viral DNA with the help of reverse transcriptase enzyme the formed viral gets incorporated into the host DNA and directs the infected cells to produce viral particles. The macrophages continue to produce viral particles. The macrophages continue to produce virus. HIV then attacks helper T-lymphocytes and replicates in them continuously leads to progressive decline in the number of T-helper cells of the infected person. Due to the decrease in T-helper cells the patient becomes Immuno-deficient and is more prone to all kinds of infections. There is always a time lag between the infection and appearance of symptoms which is usually very few months to many years (usually 5 - 10 years)



12. Briefly explain the life cycle of plasmodium with a neat diagram

Answer: → Plasmodium enters the human body as sporozoites (infectious form) through the bite of infected female anopheles mosquito

→ On entering the human host, parasite initially multiplies within the liver cells and then attacks the RBCs resulting their rupture.

→ This is associated with release of toxic substance, haemozoin which is responsible for the chill and high fever recurring in every three to four days. Released parasites infect new RBC

→ Sexual stages like gametocytes are developed in the RBC

→ When a female anopheles mosquito bites the infected person these parasites enter the mosquito's body through the blood meal and undergo further development in the insect vector. Fertilization of the male and female gametocyte takes place in the mosquito stomach

→ The parasites multiply within the mosquito stomach and mature infective stages i.e., sporozoites escape from the intestine and migrate to the salivary gland where they are stored.

→ When these mosquitoes bite human, the sporozoites are introduced into his/her body there by initiating the events mentioned above or life cycle.

