Vidya Bhawan Balika Vidyapeeth Lakhisarai

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Class 12th

Subject BIOLOGY

DATE:- 07 .03.21

Answer of the following questions :

What are the various routes by which trans-mission of human immunodeficiency virus takes place?

Ans: Various routes by which transmission of human immunodeficiency virus takes place are

(i) Illicit sexual contact.
(ii) Sexual contact with multiple partners.
(iii) Transfusion of the blood of infected person.
(iv) Intravenous drug users that shares needles are at high risk of contracting AIDS.

What is the mechanism by which the AIDS virus causes deficiency of immune system of the infected person?

Ans: HIV critically injures the immune system by infecting and eventually killing T-cells. Once the virus has infected a T cell, HIV copies its RNA into double stranded DNA copy by mearis of viral enzyme reverse transcriptase. This process is called reverse transcriptase because it violates the usual way in which genetic information is transcribed. Because reverse transcriptase lacks thg proofreading function that most DNA synthesizing enzymes have, many mutations arises as the virus replicates, further hindering the ability of the immune system to combat the virus. These mutations allow the virus to evolve rapidly resulting in the lost of vital cells. As a result of progressive destruction of its T-cells, the body is easily ravaged by a number of common infectious agents. In many instances, these infections would have caused little injury if there functional T-cells clones available.

Death ultimately results from the relentless attack of opportunistic pathogens or from the body's inability to fight off malignancies.

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How is a cancerous cell different from a normal cell?

Ans: Cancer is a disease characterized by the excessive and abnormal growth of certain cells. In a healthy individual, the growth of cells is balanced by the rate of cell loss. Thus, when one attains adult age, the size and cellular contents of various body organs remain constant. The balance between the growth of the cells and the rate of cell class may be dislocated by certain chemicals, physical stresses and viral agents. As a result, the normal growth of the cells may be transformed into cancerous one. Cancerous cells acquire the ability to invade new sites, a phenomenon called metastasis. They exhibit a number of alterations on cell surface, in the cytoplasm, and in their genes. These features are used for the identification of cancers.