

For BioResire students



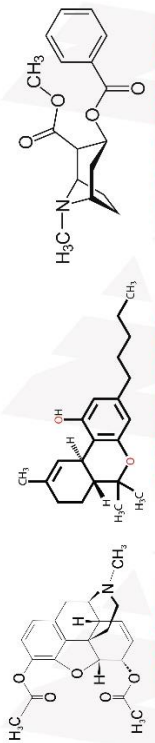
# NEET Biology Material

**Elite Batch**

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**DRUGS**

**ALCOHOL ABUSE**

**ADDITION & DEPENDENCY**

- Reckless behaviour, violence, etc.
- Respirators, Heart failure etc.
- Damaged nervous system

**EFFECT**

- Reduced testicles
- Enlargement of prostate gland
- Damaged nervous system

**SIDE EFFECT**

- Abnormal menstrual cycle
- Enlargement of testis or ovaries

**PREVENTION**

- Avoid peer pressure
- Education and counselling
- Professional and medical help

**EMPHYSEMA**

**SMOKING**

- Tobacco is smoked or chewed
- Contains nicotine (addictive)
- Cause - High BP and Heart rate
- Causes - Cancer
- Increases CO in blood & reduces Oxyhaemoglobin

**CANCER**

**CAUSE**

Carcinogenesis

- Molecular Biology Techniques
- Radiographs, CT Scan, MRI
- Using specific antibodies

**DIAGNOSIS**

- Radiography
- Chemotherapy
- Immunotherapy

**TREATMENT**

**TYPES**

- (i) Benign tumors
- (ii) Malignant tumors

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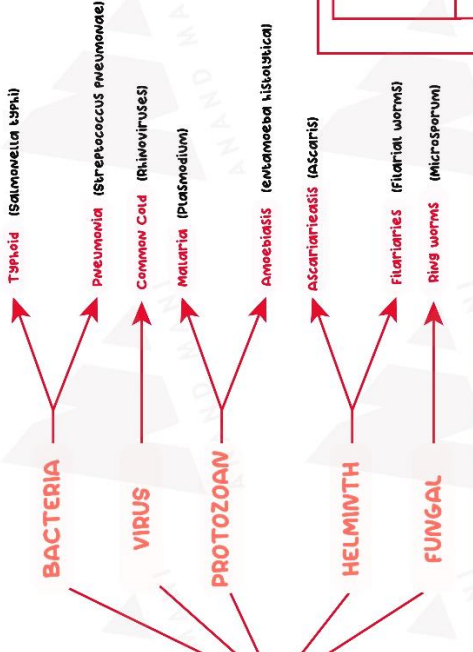
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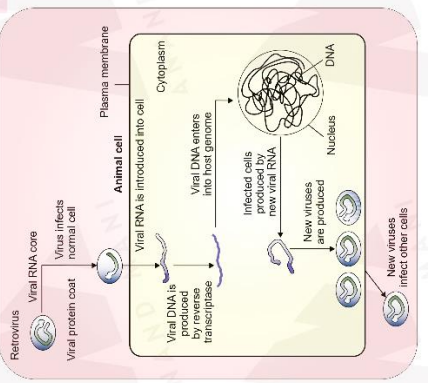
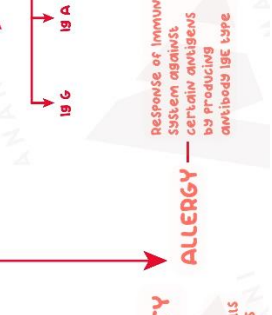
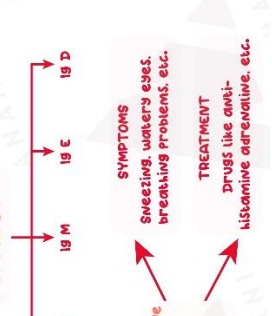
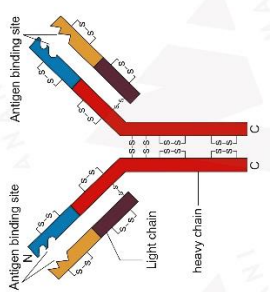
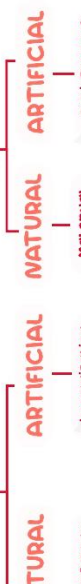
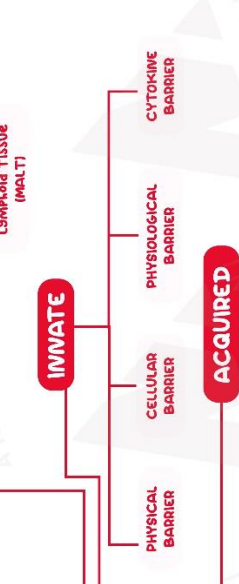
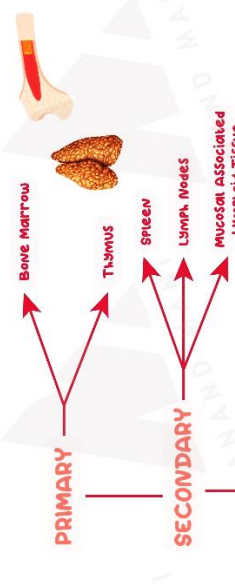
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**HUMAN HEALTH AND DISEASES**



# HUMAN HEALTH AND DISEASE

## Health:

In simple terms, Health can be defined as free from all diseases and infections. According to the World Health Organization (WHO), health is not only the absence of disease or illness. It is a state of an active and energetic condition including the physical, mental, and social well-being. A balanced diet and regular exercise play an important role in maintaining a good health of an individual.

## There are many factors which affect health, such as:

- Poorly balanced diet.
- Genetic Disorders.
- Stress, and anxiety.
- Infection from pathogens.
- Intake of unhealthy and unhygienic food.
- Lack of exercise and other physical activities.

To maintain a good health, an individual should include a healthy and balanced diet, maintain personal hygiene along with regular exercise and other physical activities. Everyone should be aware of the different types of diseases and their effects.

## Diseases:

A disease is an abnormal condition affecting a healthy living organism. It is broadly divided into infectious and non-infectious.

## Infectious diseases:

These diseases are caused by the pathogens, such as bacteria, virus, fungi, parasites and can be easily transmitted from one person to another, hence it is also known as a contagious or communicable disease. Common Cold, Tuberculosis, flu, ringworm, malaria are some examples of infectious diseases.

## Non-infectious diseases:

Diseases which cannot be transmitted from one person to another are called non-infectious disease, it is also known as a noncommunicable disease. These diseases can be either caused by genetic disorders, unhealthy diets, lack of physical activity, excessive use of tobacco, drugs or alcohol and few environmental factors.

## Some Common Diseases In Humans:

- A pathogenic bacterium known as *Salmonella typhi* is known to cause typhoid in humans. This fever can be confirmed by Widal test.
- Pneumonia is caused by *Streptococcus pneumoniae* and *Hemophilus influenzae*.
- Rhinovirus, a group of virus, is known to cause one of the most of infectious

- ailments in humans, cold.
- Plasmodium, a small protozoan causes malaria. Another protozoan, Entamoeba histolytica causing amoebiasis (amoebic dysentery).
- Ascaris (an intestinal parasite) causes ascariasis.
- Wuchereria, the filarial worm causes filariasis or elephantiasis.

## Life Cycle of Plasmodium:

The malarial infection starts when an infected female anophelid mosquito bites a healthy human. Thus, it injects the plasmodium parasites into the bloodstream in the form of sporozoites.

The sporozoites travel quickly into the human liver with the help of the bloodstream and there they asexually divide into the liver cells for 7 to 10 days. In this period no symptoms are produced in the human body.

After the multiplication of the sporozoites, converted into merozoites and they are released from the liver cells in the vesicles. They travel through the heart and arrive in the lungs where they settle down in the lung capillaries.

The disintegration of the vesicles allows merozoites to enter the blood phase of their development.

The merozoites enter the red blood cells in the bloodstream and there they multiply until the cell bursts. Then they start to enter more red blood cells. These repeated cycles of parasites cause fever each time when the parasites break the red blood cells and then invade the blood cells.

Some blood cells which are infected leave the asexual multiplication cycle and instead of replicating, merozoites develop into the sexual form of the parasite known as gametocytes.

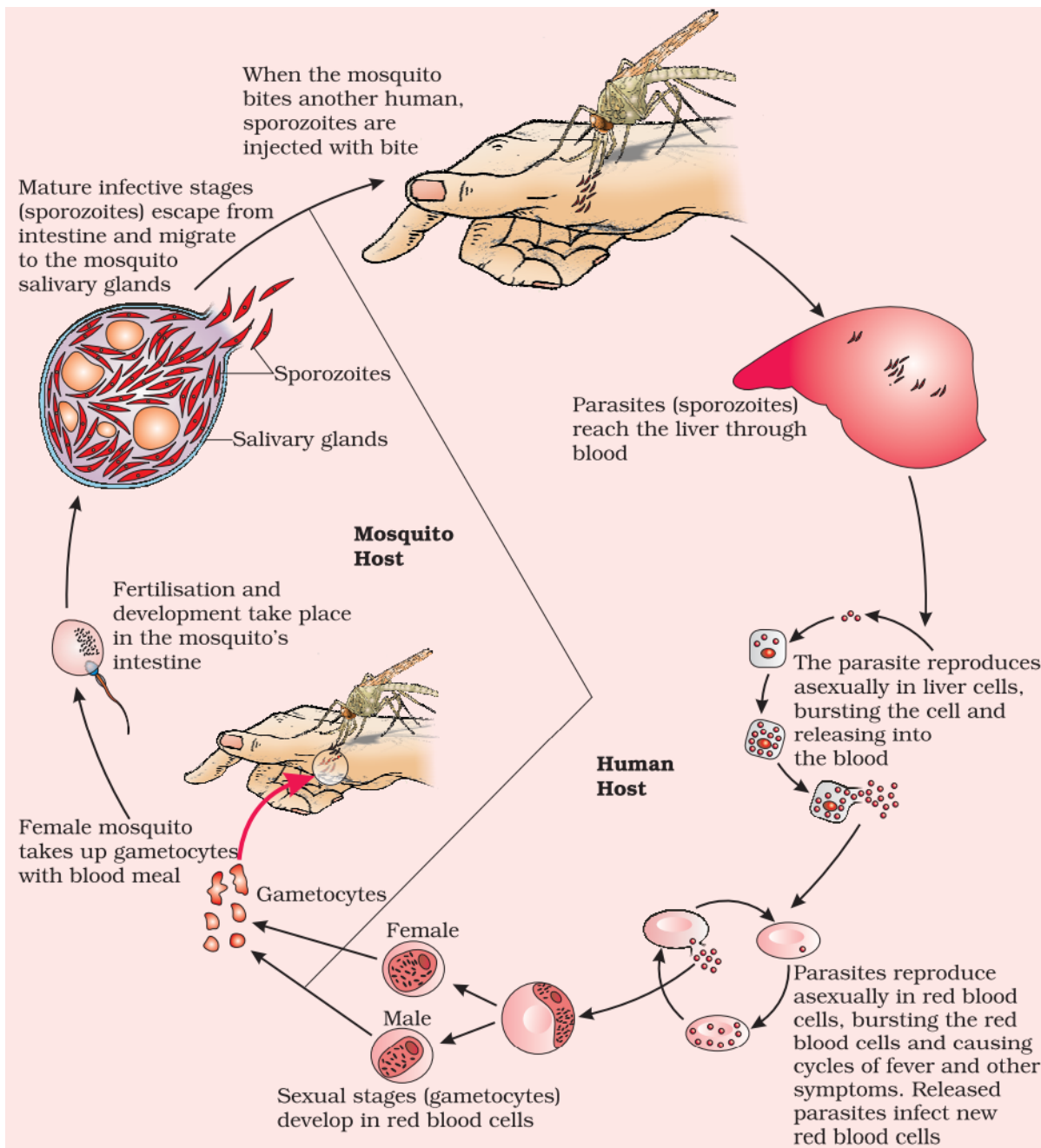
When again the mosquito bites an infected person the gametocytes enter into the mosquito body, where they further develop into mature sex cells called gametes.

The female gametes develop into ookinetes and remain in the midgut wall of the mosquito where they form oocysts on the exterior surface.

Inside the oocyst, many active sporozoites are present. When the oocyst breaks down, a large number of sporozoites are released into the body cavity and they travel to the mosquito's salivary gland.

This led to the cycle of human infection starts again when the mosquito bites another person.

Hence, the primary host is the mosquito, and the secondary host is the human.



## Immunity:

Immunity is the ability of a person to fight against diseases which can be achieved through the presence of antibodies in the person's system.

### Immunity is of two types:

- ❖ Innate immunity
- ❖ Acquired immunity

### Innate Immunity:

The immunity which is present since the time of birth and is a non-specific type of immunity is called innate immunity. The entry of pathogens is restricted with this immunity with the help of certain barriers.

## Innate immunity consists of four types of barriers. These are:

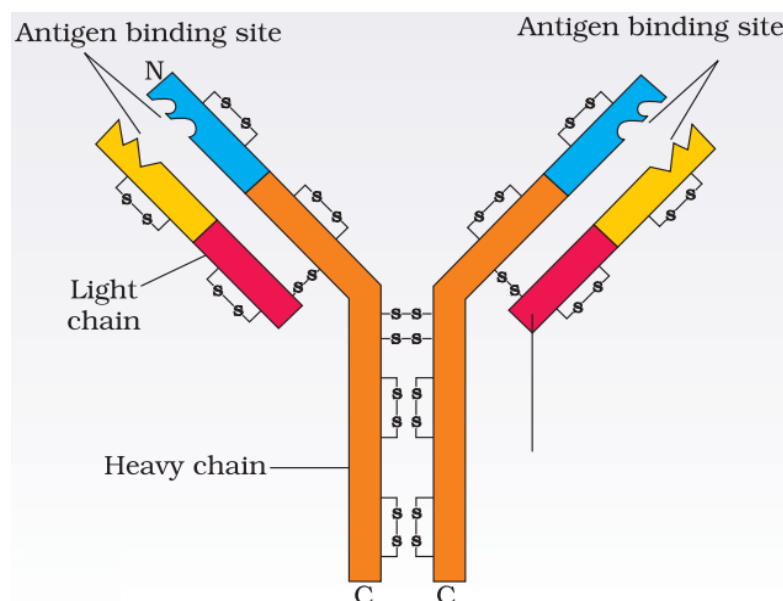
- i. **Physical barriers:** e.g., Skin, gastrointestinal, mucus coating of the epithelium lining the respiratory, and urogenital tracts.
- ii. **Physiological barriers:** Acid in the stomach, tears from eyes, saliva in the mouth.
- iii. **Cellular barriers:** Certain types of leukocytes (WBC) of our body can phagocytose and destroy microbes. For example, the polymorpho-nuclear leukocytes (PMNL-neutrophils), natural killer (type of lymphocytes) in the blood, monocytes, as well as macrophages in tissues.
- iv. **Cytokine barriers:** The cells that are infected by the virus will produce proteins called interferons that help in protecting the other non-infected cells from getting a viral infection.

## Acquired Immunity:

Acquired immunity is developed during one's life and is pathogen-specific. When the person develops an infection or a disease due to their exposure to the pathogen and the person's body becomes immune to the disease which is caused due to the development of the immune response in the body is called active immunity which is acquired naturally or secondary or anamnestic response. The lymphocytes B and T lymphocytes are the types of lymphocytes that help in the primary and secondary responses. The function of B lymphocytes is to recognize foreign substances and get attached to them whereas the T lymphocyte's function is to remember the antigens and also recognize them and respond against them and help B-lymphocytes to produce antibodies.

## Antibody Structure:

Antibodies are 'Y' shaped pretentious structures, which are made up of four polypeptide chains. Two heavy polypeptide chains and two light chains constitute the antibody and help in performing various functions. It is represented as  $H_2L_2$ . The different types of antibodies in our bodies are IgA, IgG, IgE, and IgM.



## Humoral Immune Response:

People who are administered preformed antibodies get passive immunity. It is the transfer of active humoral immunity through these readymade antibodies present in the blood (body humor).

## Cell-mediated immunity:

It defends against intracellular pathogens and cancer by binding to antigens and lysing the infected cells or cancer cells that do not involve antibodies instead release phagocytes, antigen-specific cytotoxic T-lymphocytes, and various cytokines in response to an antigen. This helps the body to differentiate between 'self' and 'non-self'.

## Active and Passive Immunity:

Active immunity is where the host produces antibodies in the form of dead or living microbes when it is exposed to antigens. It is a slow process, taking time to provide its full effective response. Passive immunity, on the other hand, is the immunity where ready-made antibodies are given directly to protect the body against any foreign agents.

## Colostrum:

The yellowish fluid colostrum secreted by mother during the initial days of lactation has abundant antibodies (IgA) to protect the infant. The foetus also receives some antibodies from their mother, through the placenta during pregnancy. These are some examples of passive immunity.

## Vaccination and Immunization:

Vaccination is based on the memory of the immune system. When an antigenic material is injected into a healthy person, it generates antibodies and memory cells as primary immune response. The vaccine is a suspension of inactivated pathogens or antigenic proteins of a pathogen that is taken orally or injected to provide immunity for that pathogen. During the infection B and T lymphocytes will get activated and forms a large number of antibodies after recognizing the antigen a.

In cases of snakebites, the injection which is given to the patients, contain preformed antibodies against the snake venom. This type of immunization is called passive immunization.

People who are administered preformed antibodies get passive immunity. It is the transfer of active humoral immunity through these readymade antibodies. This process is done when the person needs antibodies in a short span.

Newer techniques like recombinant DNA technology are used in the production of several vaccines and the vaccines produced will be having fewer side effects. It also helps in the production of antigenic polypeptides in bacteria and yeast.

## Allergies:

Allergies are also known as allergic diseases. They are the number of conditions which is caused by hypersensitivity of the immune system to various typically harmless substances present in the environment. When the immune system reacts to a foreign substance like pollen, or bee venom, or a food that does not cause a reaction in most people then allergies occur. The antibodies produced to these are of IgE type.

Common examples of allergens are outdoor pollutants including ozone and diesel exhaust, indoor pollutants such as tobacco smoke and nitrogen dioxide, microbial products, mites in dust, pollens, animal dander, etc.

Symptoms of allergic reactions include sneezing, running nose, watery eyes, and difficulty in breathing. Due to the production of histamine and serotonin in the mast cells, allergies are caused while drugs like anti-histamines, adrenalin, and steroids are taken to reduce the symptoms of allergy.

## Autoimmunity:

Autoimmunity is the ability of the human immune system to differentiate between the antigens that are foreign to the body and the antigen wlt is observed in some cases that due to certain genetic and reasons the body attacks its own cells leading to damage and this is called auto-immune disease. Example -Rheumatoid arthritis.

## Immune System in the Body:

- It consists of Lymphoid organs, tissues, cells, and antibodies.
- The immune system functions as follows:
- It helps in differentiating between self and non-self.
- It protects the body against non-self or foreign antigens.
- It is based upon the production of memory cells and reacts according to the antigens present previously.
- It is involved in allergic reactions.
- It is important in auto-immune diseases.
- It is important in organ transplant and graft rejection.

## Lymphoid organs:

Lymphoid organs are the organs where origin and maturation and proliferation of lymphocytes occur. Primary lymphoid organs include bone marrow and thymus.

Both bone-marrow and thymus provide micro-environments for the development and maturation of T-lymphocytes. The spleen is a large bean shaped organ. It mainly contains lymphocytes and phagocytes.

After maturation lymphocytes migrate to secondary lymphoid organ like spleen, lymph nodes, tonsils, peyer's patches of small intestine and appendix. They provide the sites for interaction lymphocyte with antigens.

There is lymphoid tissue also located within the lining of respiratory, digestive and urogenital tract called mucosal associated lymphoid tissue ( MALT). It constitute 50% of lymphoid tissues in human body.

## AIDS (Acquired Immuno Deficiency Syndrome):

HIV-AIDS is Acquired Immunodeficiency Syndrome, caused by the Human Immunodeficiency Virus, and interferes with the body's ability to fight infection. This virus is transmitted through contact with the infected blood, semen, or vaginal fluids. AIDS was first reported in 1981 and in approximately the last twenty-five years, it has spread all over the world killing more than 25 million persons.

Flu-like symptoms appear within a few weeks of infections such as fever, fatigue, and sore throat.

Then disease becomes asymptomatic until it progresses into AIDS. weight loss, fever or night sweats, fatigue, and recurrent infections are the symptoms of AIDS.

Till now, no cure is available for AIDS but antiretroviral regimens can slow the progress of the disease as well as prevent secondary infections and complications.

**Causative Agent:** It is caused by Human Immunodeficiency and is a member of a group of viruses called a retrovirus. Their genome is RNA which is enclosed in an envelope and they also consist of the reverse transcriptase gene.

### Transmission of HIV-infection:

Sexual contact with an infected person: individuals who have multiple sexual partners.

By transfusion of contaminated blood and blood products: Individuals who require repeated blood transfusions (certain cancers, anemia, and thalassemia).

By sharing infected needles as in the case of intravenous drug abusers: drug addicts who take drugs intravenously.

From infected mother to her child through the placenta: children born to an HIV infected mother. HIV/ AIDS does not spread through mere touch or physical contact. It primarily spreads through sexual contact but also through infected blood from shared intravenous needles and so on. This incubation period may vary from a few months to many years (usually 5-10 years).

### HIV Affects the Body:

When the virus enters the person's body then it will infect the macrophages. Then with the help of reverse transcriptase enzyme, the viral genome RNA replicates and forms viral DNA. This viral DNA will go into the host cell and then these infected cells will produce virus particles. Thus, macrophage will produce viruses. Simultaneously, the HIV virus will enter the helper T cells and produce the virus progeny in the blood which will attack other helper T lymphocytes. This cycle continues until the number of T lymphocytes decreases in the infected person. This leads to the person suffering from several diseases that include infections and diseases such as those caused by bacteria especially Mycobacterium, viruses, fungi, and even parasites like Toxoplasma. Thus the patient becomes immunodeficient leading to a very weak immune system.

**Detection:** The detection of AIDS can be done by Enzyme-linked immunosorbent assay (ELISA): It is a biochemical test that helps in detecting the presence of an antibody or an antigen in a sample. To confirm the results of the ELISA test a Western Blot test is also done.

**Treatment:** The treatment of AIDS is done by using anti-retroviral drugs which increases the lifespan of a person by it cannot prevent death.

### Prevention and Control Methods:

- Making blood transfusions safe from HIV.
- To ensure not to use the same needles that are already used.
- Free distribution of condoms.
- Controlling drug abuse.
- Advocating safe sex.
- Promoting regular check-ups for HIV in susceptible populations.

### Role of Society in preventing the spread of this disease:

- Sympathy for HIV/ AIDS patients.
- To make people aware of AIDS so as to prevent it from spreading.
- Cooperation between the society and the medical facility to prevent the spread of this disease. Disclosure about the HIV status to prevent further spread to more people.

### Cancer:

Cell growth is highly controlled and coordinated in our body but when this is controlled, mechanisms breakdown it will result in the differentiation of cells uncontrollably which will result in the growth of cancer cells leading to uncontrollable growth. These cancerous cells will divide continuously leaving the formation of mature cells called tumors.

### Tumors are of Two Types:

**Benign tumor** is one that is differentiated and capsulated. Benign tumors generally have a slower rate of growth and normally remain limited and do not spread to other parts of the body causing less damage.

**Malignant tumors** They develop when cells grow uncontrollably. If the cells still grow and spread, the disease can become life-threatening. Malignant tumors can grow quickly and spread to other parts of the body during a process called metastasis.

### Causes of Cancer:

The normal cells are transformed into cancerous cells through physical, chemical, or biological agents. These agents are called carcinogens.

### Common Carcinogens:

**Ionizing radiations:** X-rays and gamma rays.

**Non-ionizing radiations:** UV Both ionizing and non-ionizing radiations cause DNA damage that causes neoplastic transformation.

The chemical carcinogens are the major cause of lung cancer that is present in

tobacco smoke.

Oncogenic viruses consist of genes called viral oncogenes that are cancer-causing viruses. In normal cells, several genes are identified called cellular oncogenes (c-onc), or proto-oncogenes that can be activated under certain conditions thus resulting in the oncogenic transformation of the cells.

## Cancer Detection and Diagnosis:

When cancer is detected early then the disease can be treated successfully. Cancer detection is based on:

**Biopsy:** In this process, a small suspected tissue is taken and is then stained called Histopathological studies of the tissue (thin sections are examined under the microscope).

**Blood and bone marrow tests:** To detect leukemia and to measure the increased cell counts.

**Radiography:** (use of X-rays),

**CT (computed tomography):** To generate the three-dimensional structure of an organ through X-rays.

**MRI (magnetic resonance imaging):** It is the use of strong magnetic fields and non-ionizing radiations that are used to detect the changes in the living tissues.

**Antibodies against cancer-specific antigens:** Used for detection of certain cancers.

**Techniques of molecular biology:** It is used to detect various types of cancers and also in the identification of genes that help in preventing cancers. Those individuals in which these are detected are advised to stop the use of carcinogens that are harmful to them like tobacco and smoking in the case of lung cancer.

## Treatment of Cancer:

Treatment of cancer can be done by one or a combination of different approaches. The common approaches for the treatment of cancer are surgery, radiation therapy, chemotherapy, and immunotherapy.

In radiotherapy, the tumor cells are irradiated lethally while the normal cells surrounding them are taken care of.

There are several drugs that are used to kill cancerous cells called chemotherapeutics which may be specific for particular tumors. These drugs will show certain side effects that include the side effects like hair loss, anemia, etc.

The majority of the cancers are treated by a combination of all the above methods.

The Tumor cells can be detected by the immune system with the help of certain substances called biological response modifiers. They are substances such as alpha-interferon that destroy the tumor by activating the immune system.

## Drugs and Alcohol Abuse:

Commonly abused drugs include opioids, cannabinoids and coca alkaloids obtained from flowering plants and a few from fungi.

Opioids are the drugs which bind to specific opioids receptors present in our central nervous system and gastrointestinal tract. Heroin commonly called smack is chemically diacetylmorphine which is a white, odorless, bitter crystalline compound. It is extracted from the latex of poppy plant (*Papaversomniferum*). Generally taken by snorting and injection, heroin is a depressant and slows down body functions.

Cannabinoids are a group of chemicals which interact with cannabinoid receptors present in the brain. Natural cannabinoids are obtained from the inflorescence of the plant *cannabis sativa*. They include marijuana, hashish, charas and ganja. They generally taken by inhalation and oral ingestion, these are known for their effects on cardiovascular system of the body.

Coca alkaloid or cocaine is obtained from coca plant *Erythroxyton coca*, native to South America. It interferes with the transport of the neuro-transmitter dopamine. Cocaine, commonly called coke or crack is usually snorted. It has a potent stimulating action on central nervous system, producing a sense of euphoria and increased energy.

## Adolescence and Drug abuse:

- Adolescence is the period during which the child becomes matured.
- It is between 12 – 18 years of age.

## Causes of drug abuse:

- Curiosity
- Adventure
- Excitement
- Experimentation
- Stress or pressure to excel in examination

## Effects of drug/ alcohol abuse:

- Reckless behavior
- Malicious mischief
- Violence
- Drop in academic performance
- Depression, isolation, aggressiveness, etc.

Dependence is the tendency of the body to manifest a characteristic and unpleasant withdrawal syndrome if regular dose of drug/ alcohol is abruptly discontinued that includes anxiety, shakiness, nausea and sweating.

## Prevention and Control:

**Avoid undue peer pressure:** Every child has his/ her own choice and personality, which should be respected and nurtured child should not be pushed unduly to perform beyond his/ her threshold limits.

**Education and counselling:** Educating and counselling him/ her to face problems and stresses, and to accept disappointments and failures as a part of life.

**Seeking help from parents and peers:** Help from parents and peers should be sought immediately Besides getting proper advice to sort out their problems, this would help young to vent their feelings of anxiety and guilt.

**Looking for danger signs:** Alert parents and teachers need to look for and identify the danger signs discussed above This would help in initiating proper remedial steps or treatment.

**Seeking professional and medical help:** A lot of help is available in the form of highly qualified psychologists, psychiatrists, and de-addiction and rehabilitation the problem completely and lead a perfectly normal and healthy life.

## NCERT LINE BY LINE QUESTIONS

1. The 'good humor' hypothesis of health was disproved by the [Pg-145,E]
  1. discovery of blood circulation
  2. discovery of compound microscope
  3. demonstration of normal body temperature in persons with blackbile
  4. both (1) and (3)
2. The term health can be defined as [Pg-146,E]
  1. the state of body and mind in a balanced condition
  2. the reflection of a smiling face
  3. a state of complete physical, mental and social well-being
  4. the symbol of economic prosperity
3. After diagnosis by a psychiatrist, an apparently healthy person was said to be unhealthy because the patient was [Pg-146,E]
  1. inefficient at his work
  2. not prosperous economically
  3. not interested in sports
  4. showing behavioural and social Maladjustment
4. Choose the incorrect statement about health. [Pg-146,E]
  1. Health can simply be defined as absence of disease.
  2. Healthy people are more efficient at work.
  3. Health increases productivity.
  4. Health reduces infant and maternal mortality.
5. Choose the correct statements about diseases. [Pg-146,M]
  - (I) Disease adversely affects the functioning of one or more organs.
  - (II) A disease is characterized by the appearance of various signs and symptoms.
  - (III) AIDS is a fatal non-infectious disease.
  - (IV) Cancer is an infectious disease.
  1. (I) and (II)
  2. (II) and (III)
  3. (III) and (IV)
  4. (I) and (IV)
6. Diseases which are easily transmitted from one person to another are called [Pg-146,E]
  1. non-infectious diseases
  2. genetic diseases
  3. infectious diseases
  4. none of these
7. Match Column-I with Column-II and choose the correct option from the codes given below. [Pg-145,146,M]

Column-I	Column-II
(A) Health	(1) AIDS
(B) Genetic disorders	(2) Physical, mental and social well-being
(C) Infectious disease	(3) Cancer
(D) Noninfectious disease	(4) Inherited from parents from birth

Select the correct option.

A	B	C	D
1. 2	4	3	1
2. 2	4	1	3
3. 3	2	4	1
4. 1	3	2	4
8. Among the following, identify the infectious diseases. [Pg-146,E]

(I) Cancer	(II) Influenza	(III) Allergy	(IV) Smallpox
------------	----------------	---------------	---------------

  1. (I) and (II)
  2. (II) and (III)
  3. (III) and (IV)
  4. (II) and (IV)
9. Assertion: Diseases are characterized by the appearance of various signs and symptoms. [Pg-146,E]  
Reason: Disease always adversely affects only one organ or system.

1. Both assertion and reason are true and reason is the correct explanation of assertion.
  2. Both assertion and reason are true but reason is not the correct explanation of assertion
  3. Assertion is true but reason is false.      4. Both assertion and reason are false.
10. Assertion: AIDS is an infectious disease.      [Pg-146,E]  
Reason: AIDS can be easily transmitted from one person to another.
1. Both assertion and reason are true and reason is the correct explanation of assertion.
  2. Both assertion and reason are true but reason is not the correct explanation of assertion.
  3. Assertion is true but reason is false. 4. Both assertion and reason are false.

### PARA-8.1

#### COMMON DISEASES IN HUMANS

11. Diseases can be caused by the infection of      [Pg-146,E]  
1. bacteria    2. Viruses    3. helminths      4. all of these
12. The disease-causing organisms in plants and animals are called      [Pg-146,E]  
1. vectors    2. pathogens    3. Insects      4. worms
13. The pathogens can affect our body by      [Pg-146,E]  
1. interfering with normal vital activities    2. resulting in morphological damage  
3. resulting in functional damage      4. all of these
14. Most of the parasites are considered as      [Pg-146,E]  
1. vectors    2. pathogens    3. worms      4. none of these
15. Production of digestive juices in the stomach in excessive amount results in      [Pg-146,E]  
1. ulcers 2. cirrhosis    3. jaundice      4. diarrhoea
16. The inflammation of pancreas is      [Pg-146,E]  
1. pancreatitis 2. jaundice    3. ulcer      4. none of these
17. Match Column-I with Column-II and choose the correct option from the codes given below. [Pg-146,147,M]

#### Column-I

- (A) Lactose intolerance  
(B) Celiac disease  
(C) Diarrhoea  
(D) Pancreatitis

#### Column-II

- (1) Excessive passage of loose & watery feces  
(2) Disability to synthesize lactase enzyme  
(3) Inflammation of pancreas  
(4) Inflammation of small intestine

#### Codes-

	A	B	C	D
1.	4	2	3	1
2.	2	4	1	3
3.	1	3	4	2
4.	3	1	2	4

18. The pathogens that enter the gut can      [Pg-146,E]  
1. survive in the stomach at low pH    2. resist the various digestive enzymes  
3. survive only at high temperature    4. both (1) and (2)
19. In human beings, typhoid fever is caused by the infection of      [Pg-146,E]  
1. *Salmonella typhi*      2. *E. coli*  
3. *Plasmodium vivax*    4. *Entamoeba histolytica*
20. *Salmonella typhi* infects      [Pg-146,E]  
1. large intestine      2. stomach  
3. small intestine      4. liver
21. The pathogen of typhoid fever enters in the body through      [Pg-146,E]  
1. contaminated food    2. contaminated water  
3. inhaling of air droplets released by diseased person  
4. both (1) and (2)
22. The symptoms of typhoid include      [Pg-146,E]  
1. high fever      2. stomach pain  
3. loss of appetite      4. all of these
23. The typhoid can be diagnosed by      [Pg-147,M]  
1. ELISA    2. PCR 3. Widal test    4. ESR

24. Identify the correct pair representing the causative agent of typhoid fever and the confirmatory test for typhoid. [Pg-147,E]  
 1. *Plasmodium vivax*/UTI test      2. *Streptococcus pneumoniae*/Widal test  
 3. *Salmonella typhi*/Anthrone test      4. *Salmonella typhi*/Widal test
25. The causative agents of pneumonia in humans is/are [Pg-147,E]  
 1. *Streptococcus pneumoniae*      2. *Haemophilus influenzae*  
 3. *Bacillus anthracis*      4. Both (1) and (2)
26. In pneumonia, which part of respiratory system is affected? [Pg-147,E]  
 1. Alveoli      2. Nose      3. Respiratory passage      4. All of these
27. The group of symptoms that is indicative of pneumonia [Pg-147,E]  
 1. constipation, abdominal pain, cramps, blood clots.  
 2. difficulty in respiration, fever, chills, cough, headache.  
 3. nasal congestion and discharge, cough, constipation, headache.  
 4. high fever, weakness, stomach pain, loss of appetite, constipation.
28. Among the following which one is not a bacterial disease? [Pg-147,E]  
 1. Dysentery      2. Plague      3. Diphtheria      4. Common cold
29. Which of the following sets of diseases is caused by bacteria? [Pg-147,M]  
 1. Tetanus and mumps      2. Herpes and influenza  
 3. Cholera and tetanus      4. Typhoid and small pox
30. Choose the incorrect statement from the following. [Pg-147,M]  
 1. In severe cases of typhoid, intestinal perforation and death may occur.  
 2. Typhoid fever could be confirmed by Widal test.  
 3. *Streptococcus pneumoniae* infects respiratory passage.  
 4. Dysentery and plague are bacterial diseases.
31. Rhino viruses cause [Pg-147,E]  
 1. pneumonia      2. plague      3. common cold      4. typhoid
32. Rhino viruses infect [Pg-147,E]  
 1. nose      2. respiratory passage      3. lungs      4. both (1) and (2)
33. Which one is not a symptom of common cold in humans? [Pg-147,E]  
 1. Nasal congestion      2. Sore throat      3. Headache      4. Grey to bluish colour of lips
34. Match Column-I (diseases) with Column- II (causative agent) and choose the correct option from the codes given below. [Pg-147,M]

**Column-I**

**Column-II**

- (A) Typhoid  
 (B) Pneumonia  
 (C) Common cold

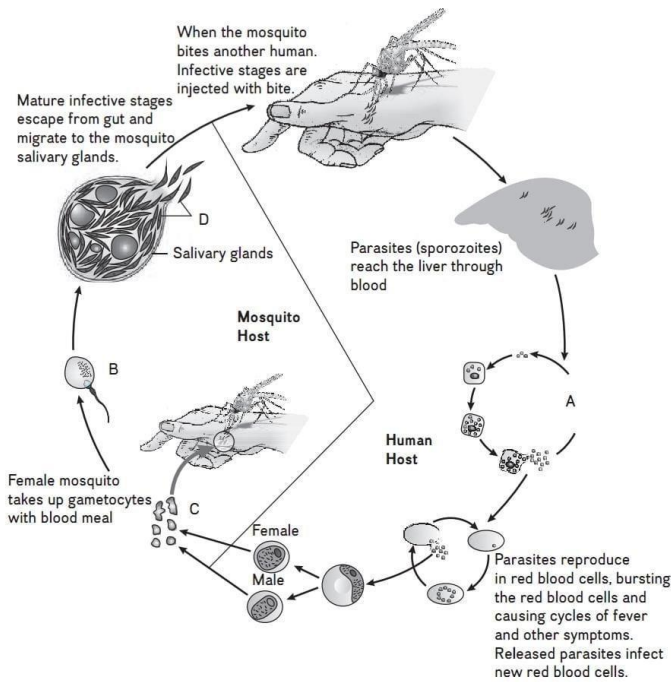
- (1) *Streptococcus pneumoniae*  
 (2) *Rhino viruses*  
 (3) *Salmonella typhi*  
 (4) *Haemophilus influenzae*

**Codes-**

- |    | <b>A</b> | <b>B</b> | <b>C</b> |
|----|----------|----------|----------|
| 1. | 3        | 1,4      | 2        |
| 2. | 3        | 1,2      | 4        |
| 3. | 2        | 3        | 1,4      |
| 4. | 1        | 4        | 2,3      |

35. The malignant malaria is caused by [Pg-147,E]  
 1. *Plasmodium vivax*      2. *Plasmodium falciparum*  
 3. *Plasmodium malariae*      4. None of these
36. Plasmodium enters the human body as [Pg-147,E]  
 1. Gametocyte      2. Haemozoin      3. Sporozoite      4. None of these
37. Haemozoin is a toxin released from [Pg-147,E]  
 1. *Streptococcus* infected cells      2. *Plasmodium* infected cells  
 3. *Homophilus* infected cells      4. None of these
38. The infectious stage of plasmodium, i.e., sporozoites are formed [Pg-147,E]  
 1. RBCs of mosquito      2. liver of the infected man

3. gut of mosquito      4. salivary glands of mosquito
39. How many hosts are required by the malarial parasite to complete its life cycle? [Pg-147,E]  
 1. One 2. Two 3. Three      4. One or two according to environmental conditions
40. The person suffering from sickle cell anaemia is [Pg-147,E]  
 1. less prone to typhoid      2. less prone to malaria  
 3. more prone to typhoid      4. more prone to malaria
41. *Entamoeba histolytica* is a protozoan parasite which infects [Pg-148,E]  
 1. stomach      2. small intestine      3. large intestine      4. liver
42. The active form of *Entamoeba histolytica* feeds upon [Pg-148,E]  
 1. mucosa and submucosa of colon only      2. food in intestine  
 3. blood only      4. erythrocytes, mucosa and submucosa of colon
43. Refer to the given figure showing stages in the life cycle of use plasmodium. In the figure, which type of reproduction is occurring at stages A and B respectively. Also, identify C and D in the figure. [Pg-148,M]



- |    | <b>A</b> | <b>B</b> | <b>C</b>    | <b>D</b>    |
|----|----------|----------|-------------|-------------|
| 1. | Asexual  | Sexual   | Gametocytes | Sporozoites |
| 2. | Sexual   | Asexual  | Gametocytes | Sporozoites |
| 3. | Asexual  | Sexual   | Sporozoites | Gametocytes |
| 4. | Asexual  | Sexual   | Gametocytes | Ookinetes   |
44. Match Column-I (Diseases) with Column-II (causative agents) and choose the correct option from the codes given below. [Pg-146-149,M]

<b>Column-I</b>	<b>Column-II</b>
(A) Typhoid	(1) <i>Entamoeba histolytica</i>
(B) Malaria	(2) <i>Salmonella typhi</i>
(C) Amoebiasis	(3) <i>Rhino viruses</i>
(D) Common cold	(4) <i>Plasmodium vivax</i>

Codes-

- |    | <b>A</b> | <b>B</b> | <b>C</b> | <b>D</b> |
|----|----------|----------|----------|----------|
| 1. | 2        | 4        | 1        | 3        |
| B) | 4        | 3        | 2        | 1        |
| 3. | 1        | 2        | 4        | 3        |
| D) | 3        | 1        | 2        | 4        |
45. Choose the correct statements about amoebiasis. [Pg-148,149,E]  
 (I) It is caused by the infection of *Entamoeba histolytica*.

(II) Its symptoms include loose motion, abdominal pain and cramps, stools with excess mucous and blood clots.

(III) Houseflies act as mechanical carriers for the parasite.

(IV) The main sources of its infection are drinking water and food contaminated by the fecal matter.

1. (I) and (II) 2. (II) and (III) 3. (I), (III) and (IV) 4. All of these

46. Ascaris, which causes ascariasis is an/a [Pg-149,E]

1. intestinal parasite                      2. stomach parasite  
3. liver parasite                            4. none of these

47. The symptoms of ascariasis include [Pg-149,E]

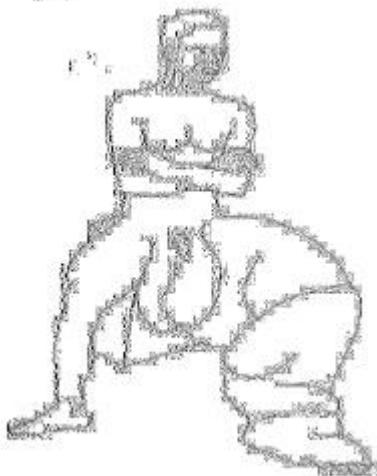
1. internal bleeding                      2. anemia  
3. muscular pain                            4. all of these

48. In which disease does mosquito transmitted pathogen cause chronic inflammation of lymphatic vessels?

[Pg-149,M]

1. Elephantiasis                            2. Ascariasis  
3. Ringworm disease                      4. Amoebiasis

49. Refer to the given figure. [Pg-149,M]



Which disease is shown in the figure?

1. Amoebiasis 2. Filariasis 3. Elephantiasis 4. Both (2) and (3)

50. Among the following which does not cause ringworm disease in humans? [Pg-149,E]

1. Microsporium 2. Macrosporium 3. Epidermophyton 4. Trichophyton

51. Appearance of dry, scaly lesions on various parts of the body is symptom of which infectious disease?

1. Filaria 2. Ascariasis 3. Ringworm 4. None of these [Pg-149,E]

52. Match the pathogens given in Column-I to the body organs to which they affect in Column-II. Choose the correct answer from the codes given below. [Pg-149,M]

**Column-I**

- (1. Ascaris  
(2. Wuchereria  
(3. Trichophyton  
(4. *Streptococcus pneumonia*

**Column-II**

- (1) Lymphatic vessels of lower limbs  
(2) Intestine  
(3) Skin, scalp and nails  
(4) Lungs

**Codes-**

	A	B	C	D
1.	2	1	3	4
2.	1	2	4	3
3.	3	2	1	4
4.	4	3	2	1

53. Ringworms are generally acquired from [Pg-149,E]

1. soil                      2. infected towels  
3. infected combs      4. all of these

54. Match Column-I with Column-II and choose the correct option from the codes given below. [Pg-149,M]

**Column-I**

- (1) *Entamoeba histolytica*  
 (2) *Plasmodium vivax*  
 (3) *Ascaris lumbricoides*  
 (4) *Trichophyton rubrum*

**Column-II**

- (1) Sporozoa  
 (2) Rhizopoda  
 (3) Deuteromycetes  
 (4) Nematoda

**Codes-**

- |    | A | B | C | D |
|----|---|---|---|---|
| 1. | 2 | 1 | 4 | 3 |
| 2. | 1 | 2 | 3 | 4 |
| 3. | 4 | 3 | 2 | 1 |
| 4. | 3 | 4 | 1 | 2 |

55. Trichophyton feeds on [Pg-149,E]  
 1. goblins of blood                      2. keratin of skin  
 3. cellulose of leaves                    4. none of these
56. Choose the incorrect statement from the following. [Pg-149,M]  
 1. *Wuchereria bancrofti* causes chronic inflammation of the lymphatic vessels.  
 2. The pathogens of filaria are transmitted to a healthy person through houseflies.  
 3. Trichophyton is responsible for ringworm.  
 4. Common cold is a viral disease.
57. Read the following statements carefully and choose the option that correctly identifies the true statements.  
 (I) Many infectious diseases can be prevented and controlled by maintaining personal and public hygiene [Pg-149,H]  
 (II) Proper disposal of waste and excreta is particularly essential for the airborne diseases.  
 (III) Malaria can be prevented by eliminating its vector and their breeding places  
 (IV) Chikungunya is a vector-borne disease.  
 1. (I), (II) and (III)      2. (II), (III) and (IV)  
 3. (IV), (II) and (I)      4. (I), (III) and (IV)
58. The most important measure to control malaria and filariasis is to control or eliminate the [Pg-149,E]  
 1. vectors                                  2. breeding places of vectors  
 3. causal organism                      4. both (1) and (2)
59. Match Column-I with Column-II and choose the correct option from the codes given below **Pg-147-149,M]**

**Column-I**

- (A) Food-borne disease  
 (B) Air-borne disease  
 (C) Vector-borne disease

**Column-II**

- (1) Pneumonia  
 (2) Amoebic dysentery  
 (3) Malaria  
 (4) Typhoid

**Codes-**

- |    | A   | B   | C   |
|----|-----|-----|-----|
| 1. | 2,4 | 1   | 3   |
| 2. | 1,4 | 2   | 3   |
| 3. | 3   | 2,4 | 1   |
| 4. | 2   | 3   | 4,1 |

60. Which fish is introduced in ponds that feed on mosquito larva? [Pg-150,E]  
 1. Rohu 2. Katla 3. Gambusia 4. None of these
61. The vector that transmits the disease chikungunya is [Pg-150,E]  
 1. Housefly                                  2. Cockroach    3. Aedes mosquito    4. Female Anopheles
62. Dengue is transmitted through  
 1. female Anopheles    2. housefly    3. Gambusia                                  4. Aedes mosquito
63. A deadly disease that has been eradicated from India is [Pg-150,E]  
 1. typhoid                                  2. smallpox    3. dengue                                  4. cancer
64. Among the following diseases, for which one is vaccine available? [Pg-150,E]  
 1. Polio 2. Pneumonia 3. Tetanus 4. All of these

65. Match Column-I with Column-II and choose the correct option from the codes given below. [Pg-150,M]

**Column-I**

- (A) Amoebic dysentery
- (B) Dengue
- (C) Malaria

**Column-II**

- (1) Female Anopheles
- (2) Housefly
- (3) Aedes mosquito

Codes-

	A	B	C
1.	3	2	1
2.	2	3	1
3.	1	2	3
4.	2	1	3

66. **Assertion:** Most of the parasites are pathogens. [Pg-150,H]

**Reason:** Disease causing organisms are called pathogens hosts as parasite.

- 1. Both assertion and reason are true and reason is the correct explanation of assertion.
- 2. Both assertion and reason are true but reason is not the correct explanation of assertion.
- 3. Assertion is true but reason is false.
- 4. Both assertion and reason are false.

67. **Assertion:** Pneumonia is caused by the infection of *Streptococcus pneumoniae*. [Pg-150,H]

**Reason:** *Streptococcus pneumoniae* bacteria infect respiratory passage.

- 1. Both assertion and reason are true and reason is the correct explanation of assertion.
- 2. Both assertion and reason are true but reason is not the correct explanation of assertion.
- 3. Assertion is true but reason is false.
- 4. Both assertion and reason are false.

68. **Assertion:** The malarial parasite requires two hosts to complete its lifecycle. [Pg-150,H]

**Reason:** These two hosts are human and mosquito.

- 1. Both assertion and reason are true and reason is the correct explanation of assertion.
- 2. Both assertion and reason are true but reason is not the correct explanation of assertion.
- 3. Assertion is true but reason is false.
- 4. Both assertion and reason are false.

69. **Assertion:** *Wuchereria bancrofti* affects the blood vessels of the lower limbs. [Pg-150,H]

**Reason:** This pathogen is transmitted to a healthy person through the bite of male mosquito vectors.

- 1. Both assertion and reason are true and reason is the correct explanation of assertion.
- 2. Both assertion and reason are true but reason is not the correct explanation of assertion.
- 3. Assertion is true but reason is false.
- 4. Both assertion and reason are false.

## Para-8.2 Immunity

70. The ability of the host to fight against disease causing organism is known as [Pg-150,E]

- 1. pathogenicity
- 2. immunity
- 3. immunisation
- 4. none of these

71. Innate immunity [Pg-150,E]

- 1. is non-specific type of defence.
- 2. is present at the time of birth.
- 3. consists of four types of barriers.
- 4. all of these

72. Which type of immunity is present from the birth? [Pg-150,E]

- 1. Acquired
- 2. Innate
- 3. Specific
- 4. None of these

73. Identify the physical barrier of immunity from the following. [Pg-150,E]

- 1. Skin on our body
- 2. Acid in the stomach
- 3. PMNL-neutrophils
- 4. Both (1) and (2)

74. Saliva in the mouth is an example of [Pg-150,E]

- 1. physical barrier of immunity.
- 2. physiological barrier of immunity.
- 3. cellular barrier of immunity.
- 4. cytokine barrier of immunity.

75. Humans have acquired immune system that produces antibodies to neutralize pathogens. Still innate immune system is present at the time of birth because it [Pg-151, M]

- 1. provides passive immunity
- 2. is very specific and uses different macrophages
- 3. produces memory cells for mounting fast secondary response
- 4. has natural killer cells which can phagocytose and destroy microbes

76. A substance produced by a virus infected cell that can protect other cells from further infection is [Pg-151, E]

1.colostrum 2.serotonin 3.interferon 4.histamine  
 77. Interferons, produced by virus-infected cells are [Pg-151, E]

1.enzymes 2.proteins 3.lipids 4.none of these  
 78. Match Column-I with Column-II and choose the correct answer from the codes given below. [Pg-151, M]

Column-I	Column-II
(A) Physical barrier	(1) Acid in the stomach
(B) Physiological barrier	(2) Monocytes
(C) Cellular barrier	(3) Interferon
(D) Cytokine barrier	(4) Mucus coating of the epithelium lining of urogenital tract

Codes-

	A	B	C	D
1.	4	1	2	3
2.	1	3	4	2
3.	2	4	3	1
4.	3	2	1	4

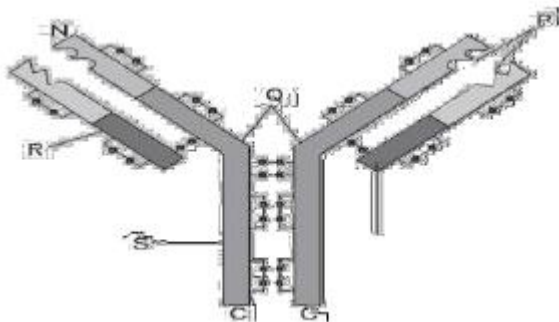
79. The pathogen specific immunity is [Pg-151, E]  
 1.innate immunity 2.acquired immunity 3.physical strength 4.none of these

80. Subsequent encounter with the same pathogen elicits a/an [Pg-151, E]  
 1.secondary response 2.highly intensified response  
 3.anamnestic response 4.all of these

81. Antibodies are produced by [Pg-151, E]  
 1.T-lymphocytes 2.B-lymphocytes 3.monocytes 4.both (1) and (2)

82. An antibody is represented as [Pg-151, E]  
 1.H<sub>3</sub>L<sub>3</sub> 2.H<sub>1</sub>L<sub>1</sub> 3.H<sub>2</sub>L<sub>2</sub> 4.None of these

83. Refer to the given figure showing structure of an antibody. In the figure some parts are labelled as P, Q, R and S. Identify the part which binds with antigen. [Pg-151, M]



1.Q 2.P 3.R 4.S

84. Which of the following immune responses is responsible for rejection of kidney graft? [Pg-151, H]  
 1.Auto-immune response 2.Humoral immune response  
 3.Inflammatory immune response 4.Cell-mediated immune response

85. Transplantation of tissues/organs fails often due to non-acceptance by the patient's body. Which type of immune response is responsible for such rejections? [Pg-151, E]

1.Cell-mediated immune response 2.Humoral immune response  
 3.Physiological immune response 4.Auto immune response

86. Match Column-I with Column-II and choose the correct option from the codes given below. [Pg-151, M]

Column-I	Column-II
(A) Innate immunity	(1) Antibodies
(B) Acquired immunity	(2) Non-specific immune response
(C) Humoral immune response	(3) T-lymphocytes
(D) Cellmediated immunity	(4) Pathogen specific immune response

Codes-

A	B	C	D
---	---	---	---

1. 4 2 3 1  
2. 2 4 1 3  
3. 2 4 3 1  
4. 1 3 4 2
87. Choose the incorrect statement from the following. [Pg-151, M]  
1.Primary immune response is of low intensity.  
2.The primary and secondary immune responses are carried out with the help of B-lymphocytes and Tlymphocytes.  
3.B-cells themselves do not secrete antibodies but help T-cells to produce them.  
4.Antibodies are found in blood, therefore it is called humoral immune response.
88. When a host is exposed to antigens, antibodies are produced in the host body. This type of immunity is called [Pg-152,E]  
1.active immunity 2.passive immunity 3.innate immunity 4.none of these
89. When readymade antibodies are directly given to protect the body against foreign agents, it is called [Pg-152,E]  
1.cell-mediated immunity 2.passive immunity 3.active immunity 4.innate immunity
90. Colostrum, the yellowish fluid, secreted by mother during the initial days of lactation is very essential to impart immunity to the newborn infants because it contains [Pg-152,E]  
1.natural killer cells 2.monocytes 3.macrophages 4.immunoglobulin A
91. Which type of antibodies are found in colostrum? [NCERT Exemplar] [Pg-152,E]  
1.O = IgG type 2.O = IgD type 3.O = IgA type 4.O = IgE type
92. Consider the following statements and choose the correct statements. [Pg-152,H]  
(I) Active immunity is slow and takes time to give its full effective response.  
(II) In passive immunity, ready-made antibodies are directly given  
(III) Colostrum contains IgE antibodies.  
(IV) The foetus also receives some antibodies from its mother.  
1.(I), (II) and (III) 2.(I), (II) and (IV)  
3.(I), (III) and (IV) 4.All of these
93. The principle of immunisation is based on which property of immune system? [Pg-152,M]  
1.Discriminate between self and nonself 2.Memory  
3.Production of antibodies 4.All of these
94. Match each disease with its correct type of vaccine. [Pg-152,M]

Column-I	Column-II
(A) Tuberculosis	(1) Harmless virus
(B) Whooping cough	(2) Inactivated toxin
(C) Diphtheria	(3) Killed bacteria
(D) Polio	(4) Harmless bacteria

Codes-

	A	B	C	D
1.	3	2	4	1
2.	4	3	2	1
3.	1	2	4	3
4.	2	1	3	4

95. In case of snakebites, the injection which is given to the patients, contains [Pg-152,E]  
1.antigens 2.antigen – antibody complexes 3.antibodies 4.enzymes
96. In vaccination, what is introduced in the body? [Pg-152,E]  
1.Antigenic proteins of pathogen 2.Inactivated pathogen  
3.Weakened pathogen 4.All of these
97. Vaccine of hepatitis B is produced from [Pg-152,E]  
1.Yeast 2.Rhizobium 3.Agrobacterium 4.Azadirachta
98. Choose the incorrect statement about vaccination. [Pg-152,E]  
1.In passive immunization, preformed antibodies are injected in the body.  
2.Vaccines can be produced using recombinant DNA technology.

3. Vaccines generate memory B-cells and T-cells.  
 4. Vaccines given in case of snakebite contains preformed antigens.

99. The exaggerated response of the immune system to certain antigens in the environment is called [Pg-152,E]

1. immunisation      2. allergy      3. vaccination      4. none of these

100. The substances which produce allergy are called [Pg-152,E]

1. antigens      2. pathogens      3. allergens      4. antibodies

101. The antibodies produced against allergens are of [Pg-152,E]

1. O = IgA type      2. O = IgE type      3. O = IgM type      4. O = IgG type

102. Match Column-I with Column-II and choose the correct option from the codes given below. [Pg-152,M]

Column-I	Column-II
(A) Colostrum	(1) IgE
(B) Allergy	(2) IgA
(C) Graft rejection	(3) Passive immunisation
(D) Preformed antibodies	(4) Cell-mediated immunity

Codes-

	A	B	C	D
1.	3	2	4	1
2.	4	3	2	1
3.	1	2	4	3
4.	2	1	4	3

103. Symptoms of allergic reactions include [Pg-153,E]

1. sneezing      2. watery eyes      3. running nose      4. all of these

104. The chemical which is released during allergic reaction? [Pg-153,E]

1. Histamine      2. Serotonin      3. Steroid      4. Both (1) and (2)

105. Which of the following is not an autoimmune disease? [Pg-153,E]

1. Psoriasis      2. Rheumatoid arthritis  
 3. Alzheimer's disease      4. Vitiligo

106. Which of the following diseases is an autoimmune disorder? [Pg-153,M]

1. Gout      2. Myasthenia gravis      3. Arthritis      4. Osteoporosis

107. Rheumatoid arthritis is a/an [Pg-153,E]

1. infectious disease      2. genetic disorder      3. autoimmune disease      4. non-infectious disease

108. Choose the correct reason(s) for rheumatoid arthritis. [Pg-153,M]

- (I) Body attacks self-cells  
 (II) The ability of immune system to differentiate between self and nonself increases.  
 (III) The production of antibodies increases.  
 (IV) Immune system fails to discriminate between self and non-self cells.  
 1. (I) and (IV)      2. (II) and (III)      3. (II) and (IV)      4. (I) and (III)

109. Our immune system is unique because it can [Pg-153,E]

1. recognise foreign antigens      2. respond to antigens  
 3. remember antigens      4. all of these

110. The immune system plays an important role in [Pg-153,E]

1. allergic reactions      2. autoimmune diseases      3. organ transplantation      4. all of these

111. Match Column-I with Column-II and choose the correct option from the codes given below [Pg-152,153,M]

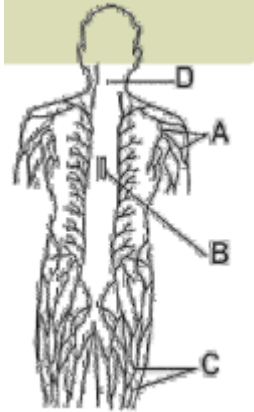
Column-I	Column-II
(A) Allergy	(1) Inability to discriminate self cells from nonself- cells
(B) Autoimmunity	(2) Introduction of killed/ Weakened pathogen
(C) Active immunisation	(3) Immune response against allergens
(D) Passive immunisation	(4) Introduction of antibodies

Codes-

	A	B	C	D
1.	3	1	2	4
2.	4	3	2	1

3. 3 1 4 2  
4. 2 4 3 1

112. Identify the primary lymphoid organ(s). [Pg-153,E]  
1.Bone marrow 2.Thymus 3.Spleen 4.Both (1.and (b)
113. In primary lymphoid organs, [Pg-153,E]  
1.lymphocytes become mature 2.lymphocyte interact with antigens  
3.lymphocytes become effector cells 4.both (1) and (2)
114. Among the following which one is not a lymphoid tissue? [Pg-153,E]  
1.Tonsils 2.Spleen 3.Thymus 4.ancreas
115. The figure given below is a diagrammatic representation of lymph nodes. In the figure some parts are labeled as A, B, C and D. Identify the part that serves to trap the antigens. [Pg-153,E]



- 1.B 2.A 3.C 4.D

116. The lymphoid organ where all blood cells including lymphocytes are produced [Pg-153,E]  
1.Spleen 2.Thymus 3.Bone marrow 4.Payer's patches
117. The lymphoid organ that keeps reducing in size with age is [Pg-153,E]  
1.tonsils 2.bone marrow 3.thymus 4.spleen
118. Which one is known as the reservoir of erythrocytes? [Pg-153,E]  
1.Spleen 2.Thymus 3.Lymph nodes 4.None of these
119. The organ(s) that provide(s) microenvironments for the development and maturation of T-lymphocytes is/are [Pg-153,E]  
1.Bone marrow 2.Thymus 3.Spleen 4.Both (1) and (2)
120. The lymphoid tissue located within the lining of digestive tract is called [Pg-153,E]  
1.lymphatic vessels 2.lymph nodes 3.MALT 4.none of these
121. MALT constitutes about \_\_\_\_\_ percent of the lymphoid tissue in human body. [Pg-154,M]  
1.20% 2.70% 3.10% 4.50%
122. Match Column-I with Column-II and choose the correct option from the codes given below [Pg-154,M]

**Column-I Column-II**

- (A) Bone marrow (1) Maturation of T-Lymphocytes  
(B)Thymus (2) Production of blood cells  
(C) Spleen (3) Serve to trap antigens  
(D) Lymph Nodes (4) Reservoir of erythrocytes

Codes-

- |    | A | B | C | D |
|----|---|---|---|---|
| 1. | 1 | 2 | 3 | 4 |
| 2. | 2 | 1 | 4 | 3 |
| 3. | 4 | 3 | 2 | 1 |
| 4. | 3 | 4 | 1 | 2 |

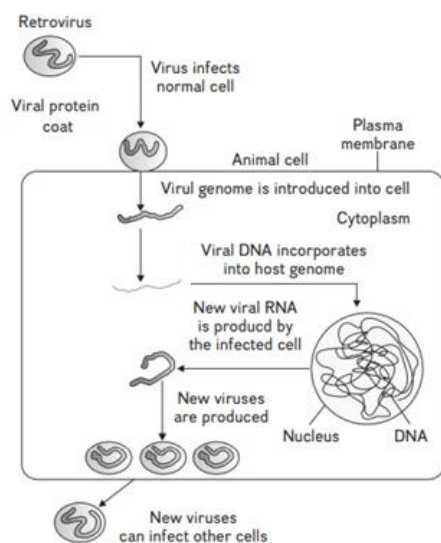
123. **Assertion:** The immune response in which antibodies are formed is called humoral immune response. [Pg-151,H]  
**Reason:** Antibodies are found in blood.  
1.Both assertion and reason are true and reason is the correct explanation of assertion.  
2.Both assertion and reason are true but reason is not the correct explanation of assertion.

- 3.Assertion is true but reason is false.4.Both assertion and reason are false.
124. **Assertion:** In passive immunization, preformed antibodies are given to the patients. [Pg-152,H]  
**Reason:** Polio vaccine also contains preformed antibodies.  
 1.Both assertion and reason are true and reason is the correct explanation of assertion.  
 2.Both assertion and reason are true but reason is not the correct explanation of assertion.  
 3.Assertion is true but reason is false.4.Both assertion and reason are false.
125. **Assertion:** Bone marrow is a secondary lymphoid organ. [Pg-153,H]  
**Reason:** In secondary lymphoid organs maturation of lymphocytes occur.  
 1.Both assertion and reason are true and reason is the correct explanation of assertion.  
 2.Both assertion and reason are true but reason is not the correct explanation of assertion.  
 3.Assertion is true but reason is false.4.Both assertion and reason are false.

## Para-8.3

### AIDS

126. The word AIDS stands for 'Acquired Immuno Deficiency Syndrome', here syndrome means [Pg-154,E]  
 1.group of diseases 2.group of symptoms 3.group of antigens 4.none of these
127. HIV is a member of a group of viruses called [Pg-154,E]  
 1.rota virus 2.rhino virus 3.retro virus 4.none of these
128. Which of the following is correct regarding AIDS causative agent HIV? [Pg-154,H]  
 1.HIV is an unenveloped retrovirus.  
 2.HIV does not escape but attacks the acquired immune response.  
 3.HIV is an enveloped virus containing one molecule of single-stranded RNA and one molecule of reverse transcriptase.  
 4.HIV is an enveloped virus that contains two identical molecules of single-stranded RNA and two molecules of reverse transcriptase.
129. HIV is not transmitted by [Pg-154,E]  
 1.transfusion of contaminated blood 2.sharing of infected needles  
 3.sexual contact with infected persons 4.shaking hands with infected person
130. HIV/AIDS spreads through [Pg-154,E]  
 1.droplets resulting from cough 2.body fluids 3.mere touch 4.All of these
131. HIV that causes AIDS, first starts destroying [AIPMT-2015] [Pg-156,M]  
 1.leucocytes 2.helper T-cells 3.thrombocytes 4.B-lymphocytes
132. AIDS is diagnosed through which technique? [Pg-156,E]  
 1.ELISA 2.PCR 3.PAGE 4.Electrophoresis
133. Refer to the given figure showing replication of retrovirus. How is it different from the replication of other viruses? [Pg-155,E]



- 1.Viral DNA is produced from viral RNA by reverse transcriptase.
- 2.Viral RNA produces dsRNA by RNA polymerase.

3. Viral DNA is produced from viral RNA by DNA polymerase.  
 4. Viral DNA is produced from host DNA by DNA polymerase.

134. Match Column-I with Column-II and choose the correct option from the codes given below [Pg-154-156,M]

**Column-I**

- (A) AIDS  
 (B) HIV  
 (C) Reverse transcriptase  
 (D) ELISA

**Column-II**

- (1) Retrovirus  
 (2) Enzyme  
 (3) Diagnostic technique  
 (4) Syndrome

Codes-

	A	B	C	D
1.	4	1	2	3
2.	1	2	4	3
3.	3	4	1	2
4.	2	3	4	1

135. Choose the incorrect statement about AIDS. [Pg-156,E]

1. AIDS is caused by HIV. 2. It can be diagnosed using ELISA technique.  
 3. HIV destroys B-lymphocytes.  
 4. HIV infected people need help and sympathy instead of being shunned by the society.

136. **Assertion:** AIDS is caused by Human Immuno Deficiency Virus (HIV). [Pg-154,H]

**Reason:** It is a member of group 'retroviruses'.

1. Both assertion and reason are true and reason is the correct explanation of assertion.  
 2. Both assertion and reason are true but reason is not the correct explanation of assertion.  
 3. Assertion is true but reason is false. 4. Both assertion and reason are false.

137. **Assertion:** Transmission of HIV infection generally occurs by sexual contact with infected person. [Pg-154,H]

**Reason:** HIV is not transmitted by the transfusion of contaminated blood and blood products.

1. Both assertion and reason are true and reason is the correct explanation of assertion.  
 2. Both assertion and reason are true but reason is not the correct explanation of assertion.  
 3. Assertion is true but reason is false. 4. Both assertion and reason are false.

138. **Assertion:** AIDS leads to a progressive decrease in number of helper T lymphocytes in the infected person.

**Reason:** HIV virus replicates and produces progeny virus in helper T lymphocytes which are released in blood. [Pg-156,H]

1. Both assertion and reason are true and reason is the correct explanation of assertion  
 2. Both assertion and reason are true but reason is not the correct explanation of assertion.  
 3. Assertion is true but reason is false. 4. Both assertion and reason are false.

## Para-8.4

### Cancer

139. Cancer cells do not show this property. [Pg-157,E]

1. Metastasis 2. Growth 3. Contact inhibition 4. Both (1) and (3)

140. Cancer cells divide continuously and give rise to a mass of cells called [Pg-157,E]

1. fibroid 2. tumor 3. oncogene 4. none of these

141. Tumours that remain confined to their original location and cause little damage are [Pg-157,E]

1. benign 2. malignant 3. carcinogen 4. none of these

142. Mass of neoplastic cells is called [Pg-157,E]

1. benign tumour 2. fibroid 3. cyst 4. malignant tumour

143. The cells of malignant tumour [Pg-157,E]

1. grow very rapidly 2. invade and damage other normal tissues  
 3. show metastasis 4. all of these

144. Cells sloughed off from malignant tumour move to other parts of the body to form new tumours. This stage of disease is called [Pg-157,E]

1. teratogenesis 2. metastasis 3. mitosis 4. metagenesis

145. Match Column-I with Column-II and choose the correct option from the codes given below. [Pg-157,M]

**Column-I**

- (A) Contact inhibition
- (B) Benign tumour
- (C) Malignant tumour
- (D) Metastasis

**Column-II**

- (1) Consists of neoplastic cells
- (2) Property of normal cells to inhibit uncontrolled growth of other cells
- (3) Property of cancerous cells to form new tumour at distant sites
- (4) Remains confined to original location

**Codes-**

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
1.	1	3	4	2
2.	4	2	3	1
3.	2	4	1	3
4.	3	1	2	4

146. Choose the incorrect statement about Malignant tumours. [Pg-157,E]

- 1. These tumours consist of neoplastic cells.
- 2. They show the property of metastasis.
- 3. The cells of this tumour have the property of contact inhibition.
- 4. The cells of malignant tumour starve the normal cells by competing for vital nutrients.

147. Transformation of normal cells into cancerous neoplastic cells may be induced by [Pg-157,E]

- 1. physical agents
- 2. chemical agents
- 3. biological agents
- 4. all of these

148. The cancer-causing agents are called [Pg-157,E]

- 1. carcinogens
- 2. teratogens
- 3. mutagens
- 4. none of these

149. X-rays lead to neoplastic transformation by causing damage to [Pg-157,E]

- 1. enzymes
- 2. hormones
- 3. DNA
- 4. all of these

150. The genes that cause cancer are called [Pg-157,E]

- 1. expressor genes
- 2. oncogenes
- 3. regulatory genes
- 4. structural genes

151. Match Column-I with Column-II and choose the correct option from the codes given below.

**Column-I**

**(Type of Carcinogen)**

- (A) Physical agent
- (B) Chemical agent
- (C) Biological agent

**Column-II**

**(Example)**

- (1) Oncogenic virus
- (2) UV rays
- (3) Tobacco
- (4) Gamma rays

[Pg-157,M]

**Codes-**

	<b>A</b>	<b>B</b>	<b>C</b>
1.	4,2	3	1
2.	4,1	2	3
3.	2	4,3	1
4.	3	2	4,1

152. Cancer causing viruses are called [Pg-157,E]

- 1. retrovirus
- 2. rhinovirus
- 3. oncogenic virus
- 4. none of these

153. Choose the correct statements about carcinogens. [Pg-157,H]

- (I) Carcinogens transform normal cells into cancerous cells.
- (II) These carcinogens could be physical, chemical or biological.
- (III) Ionizing radiations like UV-rays damage DNA leading to neoplastic transformation.
- (IV) Several proto-oncogenes have been identified in neoplastic cells that get activated under certain conditions.

- 1. (I) and (III)
- 2. (I) and (II)
- 3. (III) and (IV)
- 4. all of these

154. Which technique can be used for the detection of cancer of internal organs? [Pg-157,E]

- 1. Radiography
- 2. CT
- 3. MRI
- 4. All of these

155. Computed tomography uses 'A' to generate a three-dimensional image of the internals of an object. Here 'A' is [Pg-157,E]

- 1. X-rays
- 2.  $\gamma$ -rays
- 3.  $\alpha$ -rays
- 4. UV ray

156. Match Column-I with Column-II and choose the correct option from the codes given below. [Pg-157,M]

**Column-I**

- (A) Biopsy

**Column-II**

- (1) Threedimensional image using Xrays

- (B) Radiography (2) Histopathological study  
 (C) Computed Tomography (3) Use of strong magnetic fields and nonionising radiations  
 (D) MRI (4) Use of X-rays

**Codes-**

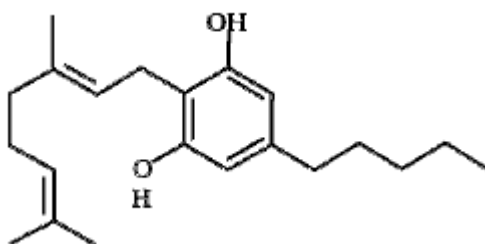
	A	B	C	D
1.	4	2	3	1
2.	2	4	1	3
3.	3	1	4	2
4.	1	3	2	4

157. The common approaches for the treatment of cancer is/are [Pg-157,E]  
 1.surgery 2.radiation therapy 3.immunotherapy 4.all of these
158. Which substance is given to cancer patients to activate their immune system? [Pg-157,E]  
 1.Carcinogens 2.Cytokinin 3.  $\alpha$ -interferon 4.None of these
159. **Assertion:** X-rays and  $\gamma$ -rays are called carcinogens. [Pg-157,H]  
**Reason:** Carcinogens transform normal cells into cancerous neoplastic cells.  
 1.Both assertion and reason are true and reason is the correct explanation of assertion.  
 2.Both assertion and reason are true but reason is not the correct explanation of assertion.  
 3.Assertion is true but reason is false.4.Both assertion and reason are false.
160. **Assertion:** Computed tomography can be used for the early detection of cancer of internal organs. [Pg-157,H]  
**Reason:** Computed tomography uses UV-rays to generate a three-dimensional image of the internals of an object.  
 1.Both assertion and reason are true and reason is the correct explanation of assertion.  
 2.Both assertion and reason are true but reason is not the correct explanation of assertion.  
 3.Assertion is true but reason is false. 4.Both assertion and reason are false.
161. **Assertion:** The patients of cancer are given  $\alpha$ -interferon. [Pg-158,H]  
**Reason:**  $\alpha$ -interferon is a biological response modifier.  
 1.Both assertion and reason are true and reason is the correct explanation of assertion.  
 2.Both assertion and reason are true but reason is not the correct explanation of assertion.  
 3.Assertion is true but reason is false. 4.Both assertion and reason are false.

## Para-8.5

### Drug and Alcohol Abuse

162. Opioid receptors are found in [Pg-158,E]  
 1.central nervous system 2.reproductive system 3.gastrointestinal tract 4.both (1.and (c)
163. Heroin is commonly called [Pg-158,E]  
 1.smack 2.cocaine 3.crack 4.none of these
164. Drug called 'Heroin' is synthesised by [Pg-158,E]  
 1.methylation of morphine 2.acetylation of morphine  
 3.glycosylation of morphine 4.nitration of morphine
165. 'Smack' is obtained from the [Pg-158,E]  
 1.leaves of Cannabis sativa 2.latex of Papaver somniferum  
 3.fruits of Erythroxylum coca 4.flowers of Datura
166. Refer to the given chemical structure. It is [Pg-159,E]



- 1.morphine 2.cocaine 3.cannabinoid 4.none of these
167. Refer to the given figure. [Pg-159,E]



The drug obtained from this plant affects

- 1.reproductive system      2.respiratory system  
3.nervous system      4.none of these
168. Natural cannabinoids are obtained from the **[Pg-159,M]**  
1.inflorescence of Cannabis sativa    2.latex of Cannabis sativa  
3.fruits of Cannabis sativa    4.leaves of Cannabis sativa
169. Cannabinoids are generally taken by **[Pg-159,E]**  
1.inhalation    2.oral ingestion    3.snorting    4.both (1) and (2)
170. Cannabinoids affect **[Pg-159,E]**  
1.cardiovascular system    2.nervous system    3.digestive system    4.none of these
171. Choose the incorrect statement from the following. **[Pg-159,M]**  
1.Heroin is chemically diacetylmorphine  
2.Cannabinoids interact with cannabinoid receptors present principally in the gut.  
3.Cannabinoids are taken by inhalation and oral ingestion.  
4.Heroin is a depressant.
172. Cocaine is obtained from **[Pg-159,E]**  
1.Papaver somniferum    2.Cannabis sativa    3.Atropa belladonna    4.Erythroxyllum coca
173. Coca alkaloid or cocaine is obtained from **[Pg-159,M ]**  
1.Datura    2.Papaver somniferum    3.Atropa belladonna    4.Erythroxyllum coca
174. Crack is usually **[Pg-159,E]**  
1.ingested orally    2.injected    3.inhaled    4.snorted
175. Refer to the given figure. This plant causes **[Pg-159,E]**



- 1.hallucinations    2.insomnia    3.depression    4.all of these
176. Among the following which plant does not process hallucinogenic properties? **[Pg-159,E]**  
1.Atropa belladonna    2.Datura    3.Cannabis sativa    4.Erythroxyllum coca
177. Among the following which one is abused by some sportspersons? **[Pg-159,E]**  
1.Heroin    2.Barbiturates    3.Cannabinoids    4.Amphetamines
178. Match Column-I with Column-II and choose the correct option from the codes gives below. **[Pg-159,M]**
- |             |                   |
|-------------|-------------------|
| Column-I    | Column-II         |
| (A) Smack   | (1) Hallucination |
| (B) Cocaine | (2) Depressant    |
| (C) Datura  | (3) Pain killer   |

(D) Morphine (4) Stimulant  
Codes-

	A	B	C	D
1.	2	4	1	3
2.	3	2	4	1
3.	1	3	2	4
4.	4	1	3	2

179. Morphine is a very effective [Pg-159,E]  
1.sedative 2.pain killer 3.stimulant 4.both (1) and (2)
180. Which chemical substance of tobacco stimulates adrenal gland to release adrenaline and noradrenaline? [Pg-159,E]  
1.Tannic acid 2.Nicotine 3.Curamin 4.Catechin
181. Whose concentration is increased in blood by smoking? [Pg-160,E]  
1.Carbon dioxide (CO<sub>2</sub>) 2.Oxygen (O<sub>2</sub>)  
3.Carbon monoxide (CO) 4.Water (H<sub>2</sub>O)
182. Choose the correct statements. [Pg-160,M]  
(I) Tobacco is smoked, chewed or used as a snuff  
(II) Tobacco contains nicotine, an alkaloid.  
(III) Smoking decreases heart rate.  
(IV) Tobacco chewing is associated with increased risk of cancer of the oral cavity.  
1.(I) and (II) 2.(III) and (IV) 3.(I), (II) and (IV) 4.All of these
183. Among the following which motivates youngsters towards drug and alcohol abuse? [Pg-161,E]  
1.Need for adventure 2.Need for excitement 3.Experimentation 4.All of these
184. Withdrawal syndrome is characterised by [Pg-161,E]  
1.anxiety 2.shakiness 3.nausea 4.all of these
185. When drugs are taken intravenously, there are increased chances of having [Pg-161,E]  
1.AIDS 2.Hepatitis B 3.Polio 4.Both (1) and (2)
186. Match Column-I with Column-II and choose the correct answer from the codes given below. [Pg-160,161,M]  
**Column-I** **Column-II**  
(A)Adolescence (1) Oral cancer  
(B) Addiction (2) Abrupt discontinuation of regular close of drug  
(C) Smoking (3) Bridge linking childhood and adulthood  
(D) Withdrawal syndrome (4) Psychological euphoria associated with drugs
- Codes-
- |    | A | B | C | D |
|----|---|---|---|---|
| 1. | 4 | 2 | 3 | 1 |
| 2. | 3 | 4 | 1 | 2 |
| 3. | 1 | 3 | 4 | 2 |
| 4. | 2 | 1 | 3 | 4 |
187. The side effects of the use of anabolic steroids in females include [Pg-162,E]  
1.masculinisation 2.increased aggressiveness 3.depression 4.all of these
188. The measure(s) useful for the prevention and control of alcohol and drug abuse among adolescents is/are [Pg-162,E]
189. 1.avoid undue peer pressure 2.education and counselling 3.looking for danger sign 4.all of these [Pg-162,H]  
**Assertion:** Cocaine is obtained from coca plant.  
**Reason:** It has a potent stimulating action on central nervous system.  
1.Both assertion and reason are true and reason is the correct explanation of assertion.  
2.Both assertion and reason are true but reason is not the correct explanation of assertion.  
3.Assertion is true but reason is false.4.Both assertion and reason are false.
190. **Assertion:** Withdrawal syndrome is characterised by anxiety, shakiness, nausea and sweating. [Pg-161,H]

**Reason:** Withdrawal syndrome is not relieved even when use of drugs is resumed again.

1. Both assertion and reason are true and reason is the correct explanation of assertion.

2. Both assertion and reason are true but reason is not the correct explanation of assertion.

3. Assertion is true but reason is false. 4. Both assertion and reason are false.

191. **Assertion:** Those who take drugs intravenously are much more likely to acquire AIDS and Hepatitis B.

**Reason:** The viruses of AIDS and Hepatitis B are transferred from one person to another by sharing of infected needles and syringes. [Pg-162,E]

1. Both assertion and reason are true and reason is the correct explanation of assertion.

2. Both assertion and reason are true but reason is not the correct explanation of assertion.

3. Assertion is true but reason is false. 4. Both assertion and reason are false.

## NEET PREVIOUS YEARS QUESTIONS

1. Which of the following is an occupational respiratory disorder? [2018]  
(a) Anthracis (b) Silicosis (c) Emphysema (d) Botulism
2. Which of the following options correctly represents the lung conditions in asthma and emphysema, respectively? [2018]  
(a) Inflammation of bronchioles; Decreased respiratory surface  
(b) Increased number of bronchioles; Increased respiratory surface  
(c) Decreased respiratory surface; Inflammation of bronchioles  
(d) Increased respiratory surface; Inflammation of bronchioles
3. Which part of poppy plant is used to obtain the drug "Smack"? [2018]  
(a) Flowers (b) Latex (c) Leaves (d) Roots
4. In which disease does mosquito transmitted pathogen cause chronic inflammation of lymphatic vessels? [2018]  
(a) Elephantiasis (b) Ascariasis (c) Amoebiasis (d) Ringworm disease
5. Which of the following is not an autoimmune disease? [2018]  
(a) Psoriasis (b) Rheumatoid arthritis (c) Vitiligo (d) Alzheimer's disease
6. Match the following sexually transmitted diseases (Column-I) with their causative agent (Column-II) and select the correct option. [2017]

Column-I		Column-II	
A	Gonorrhoea	I	HIV
B	Syphilis	II.	<i>Neisseria</i>
C	Genital Warts	III.	<i>Treponema</i>
D	AIDS	IV.	<i>Human papilloma-Virus</i>

	A	B	C	D
(a)	III	IV	I	II
(b)	IV	II	III	I
(c)	IV	III	II	I
(d)	II	III	IV	I
7. MALT constitutes about \_\_\_\_\_ percent of the lymphoid tissue in human body. [2017]  
(a) 20% (b) 70% (c) 10% (d) 50%
8. Transplantation of tissues/organs fails often due to nonacceptance by the patient's body. Which type of immuneresponse is responsible for such rejections? [2017]  
(a) Cell - mediated immune response (b) Hormonal immune response  
(c) Physiological immune response (d) Autoimmune response
9. Which of the following statements is not true for cancer cells in relation to mutations? [2016]  
(a) Mutations in proto-oncogenes accelerate the cell cycle.  
(b) Mutations destroy telomerase inhibitor.  
(c) Mutations inactive the cell control.  
(d) Mutations inhibit production of telomerase.

10. In higher vertebrates, the immune system can distinguish self-cells and non-self. If this property is lost due to genetic abnormality and it attacks self-cells, then it leads to: [2016]  
 (a) Allergic response (b) Graft rejection  
 (c) Auto-immune disease (d) Active immunity
11. Antivenom injection contains preformed antibodies while polio drops that are administered into the body contain: [2016]  
 (a) Activated pathogens (b) Harvested antibodies  
 (c) Gamma globulin (d) Attenuated pathogens
12. Which of the following viruses is not transferred through semen of an infected male? [2015]  
 (a) Human immunodeficiency virus (b) Chikungunya virus  
 (c) *Ebola* virus (d) Hepatitis B virus
13. HIV that causes AIDS, first starts destroying: [2015]  
 (a) Leucocytes (b) Helper T- Lymphocytes (c) Thrombocytes (d) B- Lymphocytes
14. Select the wrong statements. [2015]  
 (a) W.M. Stanley showed that viruses could be crystallised.  
 (b) The term '*contagium vivum fluidum*' was coined by M.W. Beijerinck.  
 (c) Mosaic disease in tobacco and AIDS in human being are caused by viruses.  
 (d) The viroids were discovered by D.J. Ivanowski.
15. Grafted kidney may be rejected in a patient due to: [2015]  
 (a) cell-mediated immune response. (b) passive immune response.  
 (c) innate immune response. (d) humoral immune response.
16. If you suspect major deficiency of antibodies in a person, to which of the following would you look for confirmatory evidences? [2015]  
 (a) Serum albumins (b) Haemocytes (c) Serum globulins (d) Fibrinogen in plasma
17. Which one of the following immunoglobulins does constitute the largest percentage in human milk? [2015]  
 (a) Ig M (b) Ig A (c) Ig G (d) Ig D
18. Asthma may be attributed to: [2015]  
 (a) bacterial infection of the lungs. (b) allergic reaction of the mast cell in the lungs.  
 (c) inflammation of the trachea. (d) accumulation of fluid in the lungs.
19. Which of the following endoparasites of humans does show viviparity? [2015]  
 (a) *Enterobius vermicularis* (b) *Trichinella spiralis*  
 (c) *Ascaris lumbricoides* (d) *Ancylostoma duodenale*
20. Match each disease (given in column I) with its correct type of vaccine (given in column II). [2015]

Column I		Column II	
A. Tuberculosis	I. Harmless virus		
B. Whooping cough	II. Inactivated toxin		
C. Diphtheria	III. Killed bacteria		
D. Polio	IV. Harmless bacteria		

	A	B	C	D
(a)	I	II	IV	I
(b)	IV	III	II	I
(c)	I	II	IV	III
(d)	II	I	III	IV

21. The active form of *Entamoeba histolytica* feeds upon: [2015]  
 (a) mucosa and submucosa of colon only. (b) food in intestine.  
 (c) blood only. (d) erythrocytes; mucosa and submucosa of colon.
22. Which of the following is not a sexually transmitted disease? [2015]  
 (a) Acquired Immuno Deficiency Syndrome (AIDS) (b) Trichomoniasis  
 (c) Encephalitis (d) Syphilis
23. Which of the following diseases is caused by a protozoan? [2015]  
 (a) Influenza (b) Babesiosis (c) Blastomycosis (d) Syphilis
24. Which is the particular type of drug that is obtained from the plant whose one flowering branch is shown below? [2014]



- (a) Hallucinogen      (b) Depressant      (c) Stimulant      (d) Pain - killer
25. At which stage of HIV infection does one usually show symptoms of AIDS? [2014]  
 (a) Within 15 days of sexual contact with an infected person.  
 (b) When the infected retrovirus enters host cells.  
 (c) When HIV damages large number of helper T-lymphocytes.  
 (d) When the viral DNA is produced by reverse transcriptase.
26. Colostrum, the yellowish fluid, secreted by mother during the initial days of lactation is very essential to impart immunity to the newborn infants because it contains [NEET-2019]  
 (1) Natural killer cells      (2) Monocytes      (3) Macrophages      (4) Immunoglobulin A
27. Which of the following immune responses is responsible for rejection of kidney graft? [NEET-2019]  
 (1) Auto- immune responses      (2) Humoral immune response  
 (3) Inflammatory immune response      (4) Cell-mediated immune response
28. Drug called 'Heroin' is synthesized by : [NEET-2019]  
 (1) methylation of morphine      (2) acetylation of morphine  
 (3) glycosylation of morphine      (4) nitration of morphine
29. Identify the correct pair representing the causative agent of typhoid fever and the confirmatory test for typhoid. [NEET-2019]  
 (1) Plasmodium vivax/UTI test.      (2) Streptococcus pneumoniae/Widal test  
 (3) Salmonella typhi/Anthrone test      (4) Salmonella typhi/Widal test
30. Humans have acquired immune system that produces antibodies to neutralize pathogens. Still innate immune system is present at the time of birth because it [NEET-2019 ODISSA]  
 (1) is very specific and uses different macrophages.  
 (2) produces memory cells for mounting fast secondary response.  
 (3) has natural killer cells which can phagocytose and destroy microbes.  
 (4) provides passive immunity.
31. Coca alkaloid or cocaine is obtained from: [NEET-2019 ODISSA]  
 (1) Papaver somniferum      (2) Atropa belladonna      (3) Erythroxylum coca      (4) Datura
32. Match the following columns and select the correct option : [NEET-2020 COVID]  
**Column - I**      **Column - II**  
 (i) Typhoid      (a) Haemophilus influenzae  
 (ii) Malaria      (b) Wuchereria bancrofti  
 (iii) Pneumonia      (c) Plasmodium vivax  
 (iv) Filariasis      (d) Salmonella typhi  
 (1) (i)-(d), (ii)-(c), (iii)-(a), (iv)-(b)      (2) (i)-(c), (ii)-(d), (iii)-(b), (iv)-(a)  
 (3) (i)-(a), (ii)-(c), (iii)-(b), (iv)-(d)      (4) (i)-(a), (ii)-(b), (iii)-(d), (iv)-(c)
33. The yellowish fluid "colostrum" secreted by mammary glands of mother during the initial days of lactation has abundant antibodies (IgA) to protect the infant. This type of immunity is called as : [NEET-2020 COVID]  
 (1) Passive immunity      (2) Active immunity      (3) Acquired immunity      (4) Autoimmunity
34. Match List – I with List – II [NEET-2021]

	<b>List – I</b>		<b>List – II</b>
--	-----------------	--	------------------

a)	Filariasis	i)	Haemophilu influenzae
b)	Amoebiasis	ii)	Trichophyton
c)	Pneumonia	iii)	Wuchereria bancrofti
d)	Ringworm	iv)	Entamoeba histolytica

- |          |          |          |          |     |
|----------|----------|----------|----------|-----|
| <b>a</b> | <b>b</b> | <b>c</b> | <b>d</b> |     |
| 1)       | iii      | iv       | i        | ii  |
| 2)       | i        | ii       | iv       | iii |
| 3)       | ii       | iii      | i        | iv  |
| 4)       | iv       | i        | iii      | ii  |

35. Given below are two statements:

[NEET-2022]

**Statement I:** Autoimmune disorder is a condition where body defence mechanism recognizes its own cells as foreign bodies.

**Statement II:** Rheumatoid arthritis is a condition where body does not attack self cells.

In the light of the above statements, choose the most **appropriate** answer from the options given below:

- 1) Both Statements I and Statement II are correct
  - 2) Both Statement I and Statement II are incorrect
  - 3) Statement I is correct but Statement II is incorrect
  - 4) Statement I is incorrect but Statement II is correct
36. Select the incorrect statement with respect to acquired immunity. [NEET-2022]
- 1) Primary response is produced when our body encounters a pathogen for the first time.
  - 2) Anamnestic response is elicited on subsequent encounters with the same pathogen.
  - 3) Anamnestic response is due to memory of first encounter
  - 4) Acquired immunity is non-specific type of defence present at the time of birth.

37. Match List I with List II :

	List I		List II
A.	Typhoid	I.	Fungus
B.	Leishmaniasis	II.	Nematode
C.	Ringworm	III.	Protozoa
D.	Filariasis	IV.	Bacteria

Choose the correct answer from the options given below:

- (a) A-I, B-III, C-II, D-IV
- (b) A-IV, B-III, C-I, D-II
- (c) A-III, B-I, C-IV, D-II
- (d) A-II, B-IV, C-III, D-I

[NEET 2024]

38. Which of the following are Autoimmune disorders?

- A. Myasthenia gravis
- B. Rheumatoid arthritis
- C. Gout

- D. Muscular dystrophy
- E. Systemic Lupus Erythematosus (SLE)

Choose the most appropriate answer from the options given below:

- (a) A, B & D only
- (b) A, B & E only
- (c) B, C & E only
- (d) C, D & E only

[NEET 2024]

39. Match List I with List II :

**List I**

- A. Common cold
- B. Haemozoin
- C. Widal test
- D. Allergy

**List II**

- I. Plasmodium
- II. Typhoid
- III. Rhinoviruses
- IV. Dust mites

Choose the correct answer from the options given below :

- (a) A-II, B-IV, C-III, D-I
- (b) A-I, B-III, C-II, D-IV
- (c) A-III, B-I, C-II, D-IV
- (d) A-IV, B-II, C-III, D-I

[NEET 2024]

40. Match List I with List II.

	List I		List II
(A)	Ringworm	(I)	Haemophilus influenzae
(B)	Filariasis	(II)	Trichophyton
(C)	Malaria	(III)	Wuchereria bancrofti
(D)	Pneumonia	(IV)	Plasmodium vivax

Choose the correct answer from the options given below:

- (a) A – II, B – III, C – I, D – IV

- (b) A-III, B-II, C-I, D-IV  
 (c) A-III, B-II, C-IV, D-I  
 (d) A-II, B-III, C-IV, D-I

[NEET 2023]

41. Which of the following sexually transmitted infections are completely curable?

- (a) HIV infection and Trichomoniasis  
 (b) Syphilis and trichomoniasis  
 (c) Hepatitis - B and Genital herpes  
 (d) Genital herpes and Genital warts

[NEET 2023 Manipur]

42. Which one of the following common sexually transmitted diseases is completely curable when detected early and treated properly?

- (a) Gonorrhoea  
 (b) Hepatitis-B  
 (c) HIV Infection  
 (d) Genital herpes

[NEET 2023]

43. Which one of the following techniques does not serve the purpose of early diagnosis of a disease for its early treatment?

- (a) Serum and Urine analysis  
 (b) Polymerase Chain Reaction (PCR) technique  
 (c) Enzyme Linked Immuno-Sorbent Assay (ELISA) technique  
 (d) Recombinant DNA Technology

[NEET 2023]

44. In which blood corpuscles, the HIV undergoes replication and produces progeny viruses?

- (a) B-lymphocytes      (b) Basophils  
 (c) Eosinophils      (d)  $T_H$  cells

[NEET 2023]

45. Match List I with List II.

	List I		List II
(A)	Heroin	(I)	Effect on cardiovascular system
(B)	Marijuana	(II)	Slow down body function
(C)	Cocaine	(III)	Painkiller
(D)	Morphine	(IV)	Interfere with transport of dopamine

Choose the correct answer from the options given below:

- (a) A-I, B-II, C-III, D-IV  
 (b) A-IV, B-III, C-II, D-I  
 (c) A-III, B-IV, C-I, D-II  
 (d) A-II, B-I, C-IV, D-III

[NEET 2023]

46. Which are correct:

- A. Computed tomography and magnetic resonance imaging detect cancers of internal organs.
- B. Chemotherapeutic drugs are used to kill noncancerous cells.
- C.  $\alpha$ -interferon activate the cancer patients' immune system and helps in destroying the tumour.
- D. Chemotherapeutic drugs are biological response modifiers.
- E. In the case of leukaemia blood cells counts are decreased.

Choose the correct answer from the option given below:

- (a) B and D only
- (b) D and E only
- (c) C and D only
- (d) A and C only

[NEET 2025]

47. Neoplastic characteristics of cells refers to:

- A. A mass of proliferating cell
- B. Rapid growth of cells
- C. Invasion and damage to the surrounding tissue
- D. Those confined to original location

Choose the correct answer from the options given below:

- (a) A, B only
- (b) A, B, C only
- (c) A, B, D only
- (d) B, C, D only

[NEET 2025]

48 . Identify the statement that is NOT correct.

- (a) Each antibody has two light and two heavy chains.
- (b) The heavy and light chains are held together by disulfide bonds.
- (c) Antigen binding site is located at C-terminal region of antibody molecules.
- (d) Constant region of heavy and light chains are located at C-terminus of antibody molecules.

[NEET 2025]

49 . After maturation, in primary lymphoid organs, the lymphocytes migrate for interaction with antigens to secondary lymphoid organ(s)/tissue(s) like:

- A. thymus
- B. bone marrow
- C. spleen
- D. lymph nodes
- E. Peyer's patches

Choose the correct answer from the options given below:

- (a) B, C, D only
- (b) A, B, C only
- (c) E, A, B only
- (d) C, D, E only

[NEET 2025]

50. Which of the following type of immunity is present at the time of birth and is a non-specific type of defence in the human body?

- (a) Acquired Immunity
- (b) Innate Immunity
- (c) Cell-mediated Immunity
- (d) Humoral Immunity

[NEET 2025]

## NCERT LINE BY LINE QUESTIONS – ANSWERS

1) 4	2) 3	3) 4	4) 1	5) 1	6) 3	7) 2	8) 4	9) 3	10) 1
11) 4	12) 2	13) 4	14) 2	15) 1	16) 1	17) 2	18) 4	19) 1	20) 3
21) 4	22) 4	23) 3	24) 4	25) 4	26) 1	27) 2	28) 4	29) 3	30) 3
31) 3	32) 4	33) 4	34) 1	35) 2	36) 3	37) 2	38) 3	39) 2	40) 2
41) 3	42) 4	43) 1	44) 1	45) 3	46) 1	47) 4	48) 1	49) 4	50) 2
51) 3	52) 1	53) 4	54) 1	55) 2	56) 2	57) 4	58) 4	59) 1	60) 3
61) 3	62) 4	63) 2	64) 4	65) 2	66) 1	67) 3	68) 2	69) 4	70) 2
71) 4	72) 2	73) 1	74) 2	75) 4	76) 3	77) 2	78) 2	79) 2	80) 4
81) 2	82) 3	83) 2	84) 4	85) 1	86) 2	87) 3	88) 1	89) 2	90) 4
91) 3	92) 2	93) 2	94) 2	95) 3	96) 4	97) 1	98) 4	99) 2	100) 3
101) 2	102) 4	103) 4	104) 4	105) 3	106) 2	107) 3	108) 1	109) 4	110) 4
111) 1	112) 4	113) 1	114) 4	115) 2	116) 3	117) 3	118) 1	119) 4	120) 3
121) 4	122) 2	123) 1	124) 3	125) 4	126) 2	127) 3	128) 4	129) 4	130) 2
131) 2	132) 1	133) 1	134) 1	135) 3	136) 2	137) 3	138) 1	139) 3	140) 2
141) 1	142) 4	143) 4	144) 2	145) 3	146) 3	147) 4	148) 1	149) 3	150) 2
151) 1	152) 3	153) 2	154) 4	155) 1	156) 2	157) 4	158) 3	159) 1	160) 3
161) 1	162) 4	163) 1	164) 2	165) 2	166) 3	167) 3	168) 1	169) 4	170) 1
171) 2	172) 4	173) 4	174) 4	175) 1	176) 3	177) 3	178) 1	179) 4	180) 2
181) 3	182) 3	183) 4	184) 4	185) 4	186) 2	187) 4	188) 4	189) 2	190) 3
191) 1									

## NEET PREVIOUS YEARS QUESTIONS-ANSWERS

1 (b) 2 (a) 3 (b) 4 (a) 5 (d) 6 (d) 7 (d) 8 (a) 9 (d) 10 (c)  
 11 (d) 12 (b) 13 (b) 14 (d) 15 (a) 16 (c) 17 (b) 18 (b) 19 (b) 20 (b)  
 21 (d) 22 (c) 23 (b) 24 (a) 25 (c) 26 (4) 27 (2) 28 (2) 29 (4) 30 (3)  
 31 (3) 32 (1) 33 (1) 34 (1) 35 (3) 36 (4) 37(b) 38(b) 39(c) 40(d) 41(b) 42(a) 43(a) 44(d) 45(d)  
 46(d)47(b)48(c)49(d)50(b)

## NEET PREVIOUS YEARS QUESTIONS-EXPLANATIONS

1. (b) Silicosis is an occupational disease caused due to excess inhalation of silica dust in the workers doing work in grinding or stone breaking industries.
2. (a) Asthma is a common long-term inflammatory disease of the airways of the lungs. It results in difficult breathing causing wheezing due to inflammation of bronchi and bronchioles. Emphysema is a chronic disorder in which alveolar walls are damaged due to which respiratory surface is decreased, and is mainly caused by smoking.
3. (b) 'Smack' also called as brown sugar/Heroin is formed by acetylation of morphine. It is obtained from the latex of unripe capsule of Poppy plant (*Papaver somniferum*).
4. (a) Lymphatic filariasis, also known as elephantiasis, is a human disease caused by parasitic worms known as filarial worms. It is caused by roundworm, *Wuchereria bancrofti* and is transmitted by *culex* mosquito.
5. (d) Alzheimer's disease is a neurodegenerative disorder, caused due to deficiency of neurotransmitter

acetylcholine. Rheumatoid arthritis (in which antibodies are produced against the synovial membrane and cartilage), vitiligo (causes white patches on skin) and psoriasis (a skin disease that causes itchy or sore patches of thick red skin) are autoimmune disorders.

6. (d) Gonorrhoea – *Neisseria* (Bacteria) Syphilis – *Treponema* (Bacteria) Genital Warts – Human papilloma virus AIDS – HIV (Virus)
7. (d) MALT or Mucosa Associated Lymphoid Tissue constitutes about 50 percent of the lymphoid tissue in human body. It is scattered along the mucosal lining in the human body.
8. (a) Cell mediated immune response causes nonacceptance or rejection of graft or transplanted tissues/ organs.
9. (d) Telomerase production is increased in cancer. Telomerase has been examined in hundreds of studies as a potentially sensitive biomarker for screening, early cancer detection, prognosis or in monitoring as an indication of residual disease.
10. (c) An autoimmune disease is a pathological state arising from an abnormal immune response of the body to substances and tissues that are normally present in the body.
11. (d) Oral polio vaccine consists of a mixture of attenuated (weakened) poliovirus strains of all three poliovirus types.
12. (b) The virus of chikunguniya is Arbovirus. It is transmitted by *Aedes* mosquito.
13. (b) After infection, HIV starts to destroy the T-cells (T-helper lymphocytes).
14. (d) T.O. Dinear (1971) discovered the viroids which are smaller than viruses.
15. (a) Cell-mediated immune response is a system which is specialised for a particular person.
16. (c) Serum globulin test provides confirmatory evidence measuring the deficiency of antibodies (g - globulin) in a person.
17. (b) Colostrum contains high levels of IgA, which gives passive immunity to foetus.
18. (b)
19. (b) *Trichinella spiralis* is an endoparasite found in human intestine. It is the smallest nematode producing larvae in large number. The production of larvae indicates vivipary. These larvae bore the intestine of human being and enter the blood and lymphatic systems.
20. (b) Tuberculosis vaccine (BCG) has inactivated bacteria. In whooping cough vaccine, there are killed pathogens of *Bordetella pertussis* which cause whooping cough. In DPT diphtheria toxoid is present. Sabin polio vaccine contains inactivated virus.
21. (d) *Entamoeba histolytica* is found in the colon. It feeds on mucosa and submucosa as well as phagocytose RBCs.
22. (c) Encephalitis is a viral disease of inflammation of the brain. It is not transmitted sexually.
23. (b) Babesiosis is malaria like disease caused by protozoon-*Babesia*. In this disease haemoglobinuric fever takes place.
24. (a) The plant illustrated in diagram is *Datura* which has hallucinogenic properties. Hallucinogen is a substance that produces psychological effects normally associated only with dreams, schizophrenia, or religious visions. It produces changes in perception, thought, and feeling.
25. (c) HIV infection does usually show symptoms of AIDS when HIV damages large number of helper T-Lymphocytes (CD<sub>4</sub> cells). AIDS is the stage of HIV infection that occurs when one immune system is badly damaged and one become vulnerable to infections and infection-related cancers called opportunistic infections. When the number of ones CD<sub>4</sub> cells falls below 200 cells per cubic millimetre of blood (200 cells/ mm<sup>3</sup>), one is considered to have progressed to AIDS.
34. The correct option is (1).
  - \* Filariasis is the disease caused by *Wuchereria bancrofti*, filarial worm.
  - \* Amoebiasis/Amoebic dysentery is caused by a protozoan parasite *Entamoeba histolytica* in the large intestine of human.
  - \* Pneumonia is caused by bacteria like *Streptococcus pneumoniae* and *Haemophilus influenzae*.
  - \* Ringworm is caused by fungi belonging to genera *Microsporium*, *Trichophyton* and *Epidermophyton*
35. In Rheumatoid arthritis self cells are attacked
36. Acquired Immunity is specific

37. Ans. (b)

Explanation

The correct answer is option (b) as

Typhoid - Caused by *Salmonella typhimurium* (Bacteria)

Leishmaniasis - Caused by protozoan i.e., *Leishmania donovani*

Ringworm - Caused by fungi belonging to the genera *Microsporum*, *Trichophyton* and *Epidermophyton*

Filariasis - Caused by *Wuchereria bancrofti* and *Wuchereria malayi* (Nematode)

### 38. Ans. (b)

#### Explanation

The correct answer is option (b) as Myasthenia gravis, Rheumatoid arthritis and Systemic Lupus Erythematosus (SLE) are autoimmune disorders.

Muscular dystrophy is a genetic disorder which progressively affects the skeletal muscles.

Gout is the inflammation of joints due to deposition of uric acid crystals.

Option (a), (c) and (d) are not the correct answer because all of them are not autoimmune disorders

### 39. Ans. (c)

#### Explanation

Correct answer is option (c) because

- Common cold is caused by Rhinoviruses
- Haemozoin is released in blood due to ruptured RBCs after Plasmodium infection.
- Widal test is used to confirm the typhoid fever.
- Allergy is caused due to dust mites.

### 40. Ans. (d)

#### Explanation

The diseases listed in List I are caused by the organisms listed in List II :

- Ringworm is caused by the fungus *Trichophyton*.
- Filariasis is caused by the parasite *Wuchereria bancrofti*.
- Malaria is caused by the protozoan *Plasmodium* species (including *Plasmodium vivax*).
- Pneumonia can be caused by a variety of organisms, including the bacterium *Haemophilus influenzae*.

Therefore, the correct answer is :

Option d : A-II, B-III, C-IV, D-I

### 41. Ans. (b)

#### Explanation

Among the options provided, sexually transmitted infections (STIs) caused by bacteria are typically curable with antibiotics, while those caused by viruses are not curable but can be managed.

Option A : HIV infection and Trichomoniasis - HIV is a viral infection and currently has no cure, but it can be managed with antiretroviral therapy. Trichomoniasis is a parasitic infection and is curable with antibiotics.

Option b : Syphilis and Trichomoniasis - Both syphilis and trichomoniasis are curable. Syphilis is a bacterial infection and can be cured with antibiotics, typically penicillin. Trichomoniasis, as mentioned above, is a parasitic infection that can also be cured with antibiotics.

Option c : Hepatitis - B and Genital herpes - Both are viral infections and, while their symptoms can be managed, they are not curable.

Option d : Genital herpes and Genital warts - Both are caused by viruses (Herpes simplex and Human papillomavirus respectively) and, while their symptoms can be managed, they are not curable.

So, the correct answer is :

Option b : Syphilis and trichomoniasis.

**42.Ans. (a)**

**Explanation**

Gonorrhoea is a sexually transmitted disease caused by the bacterium *Neisseria gonorrhoeae*. It can be effectively treated with antibiotics, especially when detected early.

Hepatitis B, HIV Infection, and Genital Herpes are caused by viruses. These viral infections can be managed with antiviral therapy but they are typically not completely curable.

So, the correct answer is :

Option a : Gonorrhoea

**43.Ans.(a)**

**Explanation**

The correct answer is option (a) because using conventional methods of diagnosis like serum and urine analysis, etc, do not help in early diagnosis.

Recombinant DNA technology, Polymerase Chain Reaction [PCR] and Enzyme Linked Immuno-Sorbent Assay (ELISA) are some of the techniques that serve the purpose of early diagnosis.

**44.Ans. (d)**

**Explanation**

HIV, or the Human Immunodeficiency Virus, primarily infects CD4+ T cells, which are a type of T cell. In the context of the options given, TH cells, or T helper cells, are a subset of CD4+ T cells.

So, the correct answer is :

Option d : TH cells

**45.Ans.(d)**

**Explanation**

The correct answer is option (d) as

- Heroin belongs to the category of opioids and it is a depressant that slows down body functions.
- Marijuana is known for its effect on the cardiovascular system of the body.
- Cocaine interferes with the transport of the neurotransmitter dopamine.

Morphine is used as a sedative and painkiller.

**46.Ans. (d)**

**Explanation**

Computed tomography and magnetic resonance imaging detect cancers of internal organs.

Several chemotherapeutic drugs are used to kill cancerous cells. The patients are given substances called biological response modifiers such as  $\alpha$ -interferon which activates their immune system and helps in destroying the tumor. Increased cell counts are found in the case of leukemias.

**47.Ans. (b)**

**Explanation**

The malignant tumors are a mass of proliferating cells called neoplastic or tumor cells. These cells grow very rapidly, invading and damaging the surrounding normal tissues.

On the other hand, Benign tumors normally remain confined to their original location and do not spread to other parts of the body and cause little damage.

**48.Ans. (c)**

**Explanation**

- Each antibody molecule has four peptide chains, two small called light chains and two longer called heavy chains.
- The antigen binding site is present at the Nterminal region of the antibody molecule.

- Constant regions of heavy and light chains are located at the C-terminal of the antibody molecule.

**49.Ans. (d)**

**Explanation**

Primary lymphoid organs: Bone marrow and thymus are the sites where immature lymphocytes differentiate into antigen-sensitive lymphocytes.

After maturation, lymphocytes migrate to secondary lymphoid organs like Spleen, Lymph nodes, Tonsils, Peyer's patches (small intestine), Appendix

Secondary organs are the sites of antigenlymphocyte interaction. On encountering an antigen, lymphocytes proliferate and form effector cells.

**50.Ans. (b)**

**Explanation**

Innate immunity is non-specific type of defence, that is present at the time of birth.

## About us

BioResire (NEET | CSIR NET | Biotech Internships) is a life sciences research and training organization dedicated to bridging the gap between academic learning and industry skills. We provide internships, projects, and programs in Bioinformatics, Biotechnology, Molecular Biology, Cancer Research, Neuroscience, and related fields, helping students build job-oriented scientific careers.

*"The future belongs to those who explore the unseen — where biology meets innovation and discovery begins."*