

B7

CHAPTERWISE QUESTION

Class XII

BIOLOGY

Time : 1½ hrs.

Marks : 35

HUMAN HEALTH AND DISEASES

SET A

SECTION - A

7 × 1 = 7

Question 1 to 7 are objective type questions. Carry one mark each.

1. AIDS is caused by HIV. Among the following which one is not a mode of transmission of HIV?

- a) Transfusion of contaminated blood b) Sharing the infected needles
c) Shaking hands with infected persons d) Sexual contact with infected persons

OR

A person with sickle cell anaemia is

- a) more prone to malaria b) more prone to typhoid
c) less prone to malaria d) less prone to typhoid

3. Match the Column I and Column II.

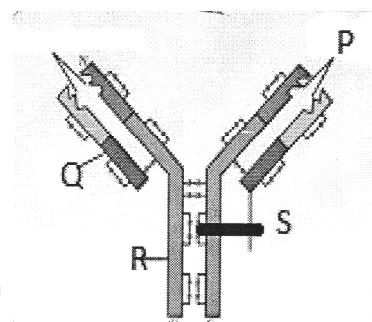
Column I	Column II
P) Malaria	i) Plasmodium
Q) Tingworm	ii) Rhino virus
R) Cold	iii) Retrovirus
S) AIDS	iv) Filarial worm
T) Elephantiasis	v) Microspore

- a) P - i, Q - iii, R - ii, S - iv, T - v b) P - i, Q - iv, R - ii, S - iii, T - v
c) P - i, Q - v, R - ii, S - iii, T - iv d) P - ii, Q - v, R - iii, S - iv, T - i

4. A cartoon of Antibody is displayed below with unlabeled parts.

Identify the parts

- a) (P) Antigenbinding site (Q) Disulphide bridge (R) Light chain (S) Heavy chain
b) (P) Disulphide bridge (Q) Heavy chain (R) Light chain (S) Antigen binding site
c) (P) Antigen binding site (Q) Light chain (R) Heavy chain (S) Disulphide bridges
d) (P) Disulphide bridges (Q) Light chain (R) Antigen binding site (S) Heavy chain



5. Which is the correct sequence for AIDS?
- a) DNA → VRNA → Protein b) VRNA → DNA → RNA → Protein
 c) VRNA → DNA → Protein d) DNA → VRNA → DNA → Protein

OR

6. Metastasis is characteristics of
- a) Malignant tumour b) Benign tumour
 c) Ulcer d) Both a and b
7. One of the choices is the correct sequences of infectious Agent and Diseases with Vector.

Name of Disease	Causative Agent	Vector
a. Typhoid	Salmonella typhi	Mosquito
b. Malaria	Rhinovirus	Anopheles mosquito
c. Chicken gunia	Flavis virus	Helminthes
d. Filariasis	Wucheraria malai	Female Culex mosquito

Question No. 8 - 9 is an Assertion Reason Type questions.

Read the following statements one labelled Assertion (A) and the other Reason (R).

Choose the correct option.

2 × 1 = 2

- a) If both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
 b) If both Assertion (A) and Reason (R) are true but Reason (R) is not the correct explanation of Assertion (A).
 c) If Assertion (A) is true but Reason (R) is false.
 d) If Assertion (A) is false but Reason (R) is true.
8. Assertion (A) : Interferons help to eliminate the viral infections.
 Reason (R) : They released by infected cells, reach the nearby uninfected cells and make them resistant to viral infection.
9. Assertion (A) : AIDS and hepatitis B are sexually transmitted diseases.
 Reason (R) : There is no permanent cure to both of them.

OR

Assertion (A) : Passive immunity is of short life span.

Reason (R) : Passive immunization is promptly unavailable.

SECTION B - SHORT ANSWER TYPE I

Q. No. 10 - 13. Answer any two

2 × 2 = 4

10. Name an opioid drug and its source plant. How does the drug affect the human body?
 11. Why is an antibody molecule represented as H_2L_2 ?
 12. Plasmodium falciparum is the causative agent of the most severe form of malaria. It is

distributed throughout the tropics. Explain why malaria is restricted to the tropics?

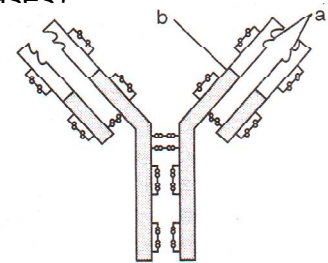
13. What is the role of histamine in inflammatory response? Name few drugs which reduce the symptoms of allergy.

SECTION C - SHORT ANSWER TYPE II

Q. No. 14 - 17. Answer any three

3 × 3 = 9

14. What are Cannabinoids? From which plant Cannabinoids are obtained? Which part of the body is affected by consuming these substances?
15. i) Name the causative agent of typhoid in humans.
ii) Name the test administered to confirm the disease.
iii) How does the pathogen gain entry into the human body? Write the diagnostic symptoms and mention the body organ that gets affected in severe cases?
16. i) What does the diagram illustrate?
ii) Name the parts labelled 'a' and 'b'.
iii) Name the type of cells that produce this molecule.
17. 'Prevention is better than cure' is an apt slogan to safeguard adulteration. List any six steps that could be taken in this regard.



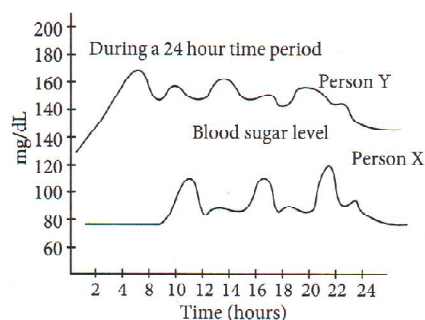
OR

- i) Write the scientific names of the two species of filarial worms causing filariases.
ii) How do they affect the body of infected person(s)?
iii) How does the disease spread?

SECTION D - CASE STUDY

18. Read the following and answer any four questions from given below. **4 × 1 = 4**

The given graphs show fluctuations in blood sugar of person X and Y during a 24 hour time periods.



Based on the above information, answer the following questions.

- i) Person X is normal and shows good control of blood sugar level. Give reason.
ii) Person Y is suffering from which disease. why?
iii) Which are the conditions that are common in person Y?
iv) What are the causes of type I and type II diabetes?

OR

A person suffering from diabetes melitus becomes weak why?

19. **Read the following and answer any four questions from 11 (i) to 11 (iv). 4 × 1 = 4**

The principle of immunisation or vaccination is based on the property of memory of the immune system. In vaccination, a preparation of antigenic proteins of pathogen or inactivated/weakened pathogen (vaccine) are introduced into the body. The antibodies would neutralise the pathogenic agents during the infection. The vaccine also generates memory B and T-cells that recognise the pathogen quickly on subsequent exposure and overwhelm the invaders with a massive production of antibodies.

- i) Hepatitis-B vaccine is produced from which microbes?
- ii) In which type of immunity, a quick immune response is needed as in tetanus infection, preformed antibodies or antitoxin is injected into the patient body?
- iii) Antivenom injection contains preformed antibodies while polio drops that are administered into the body contain which forms of pathogens?
- iv) Which infectious diseases were controlled by the use of vaccines and immunisation programmes?

SECTION E - LONG ANSWER TYPE QUESTIONS

Q. No. 20. Answer the any one.

1 × 5 = 5

20. i) Cancer is one of the most dreaded diseases. Explain 'contact inhibition' and 'metastasis' with respect to disease.
- ii) Name the group of genes that have been identified in normal cells that could lead to cancer. How do these genes cause cancer?
 - iii) Name any two techniques that are useful in detecting cancers of internal organs.
 - iv) Why are cancer patients often given a-interferon as part of the treatment?

OR

The immune system of a person is suppressed. He was found positive for a pathogen in the diagnostic test ELISA.

- a) Name the disease, the patient is suffering from.
- b) Which pathogen is identified by ELISA test?
- c) Which cells of the body are attacked by the pathogen?
- d) Suggest preventive measures of the infection.

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SET B

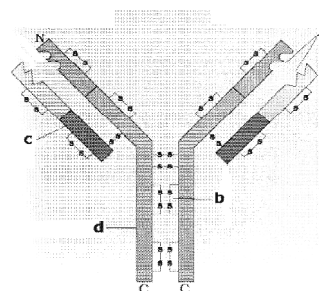
SECTION - A

7 × 1 = 7

Question 1 to 7 are objective type questions. Carry one mark each.

- Diseases are broadly grouped into infectious and non infectious diseases. In the list given below identify the infectious diseases.
I. Cancer II. Influenza III. Allergy IV. Smallpox
a) I and II b) II and III c) III and IV d) II and IV
- Antibodies present in colostrum which protect the new born from certain diseases is of
a) Ig G type b) Ig A type c) Ig D type d) Ig E type
- Identify the incorrect labelling in the following figure.

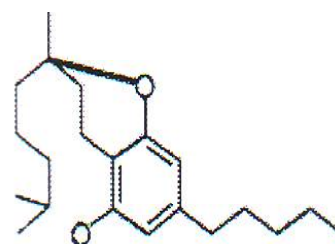
- A - Antigen Binding site
- B - Antigen Binding site
- C - Light chain
- D - Heavy rain



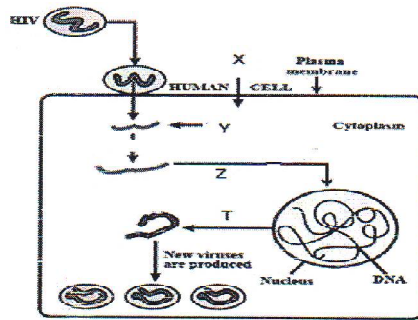
OR

Identify the mode of action of this compound.

- Interacts with cannabinoid Receptors in brain
- Binds with opioid receptors in CNS
- Used in treatment of Insomania
- Stimulates Adrinal gland



- The presence of various Barriers in Innate immunity is to prevent of Pathogen entering through different corners in our body. Some of the cells represented are located in different barriers. Identify them according to their location.
i) Skin ii) PMNL iii) Interferons iv) Mucous
a) i and iii - Physiological Barrier b) ii and iv - Cellular Barrier
c) i and v - Physical Barrier d) i and iv - Cytokine Barrier
- Identify the correct sequence of HIV life cycle from the Depicted diagram



- New viral RNA is produced by the infected cell, Viral DNA incorporates into host cell, viral RNA is introduced into cell, Virus infects normal cell.
- Virus infects normal cell, Viral RNA is introduced into cell, Viral DNA incorporates into host cell, New viral RNA is produced by the infected cell.
- Virus infects normal cell, Viral DNA incorporates into host cell, Viral RNA is introduced into cell, New viral RNA is produced by the infected cell.
- New viral RNA is produced by the infected cell, Virus infects normal cell. Viral RNA is introduced into cell, Viral DNA incorporates into host cell.

OR

The Yellowish fluid colostrum secreted by mammary glands of lactation has abundant antibodies (Ig A) to protect the infant. This type of immunity is called

- Passive immunity
 - Active immunity
 - Acquired immunity
 - Auto immunity
7. Heroin is a depressant, odorless, bitter and crystalline compound, it is extracted from latex of
- Cannabis sativa
 - Claviceps purperia
 - Papaver somniferum
 - Atropa belladonna

Question No. 8 - 9 is an Assertion Reason Type questions.

Read the following statements one labelled Assertion (A) and the other Reason (R). Choose the correct option. $2 \times 1 = 2$

- If both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
 - If both Assertion (A) and Reason (R) are true but Reason (R) is not the correct explanation of Assertion (A).
 - If Assertion (A) is true but Reason (R) is false.
 - If Assertion (A) is false but Reason (R) is true.
8. Assertion (A) : Antibody mediated immune response is proved by B-cells.
Reason (R) : B - Cells work chiefly by secreting substances called antibodies into the body fluids.
9. Assertion (A) : Repeated use of drugs increases the tolerance level of receptors in our body.
Reason (R) : Addiction occurs as receptors respond only to higher doses of drugs.

OR

Assertion (A) : Proto - Oncogenes are cellular genes required for normal growth.
Reason (R) : Under normal conditions they could lead to the oncogenic transformations of the cell.

SECTION B - SHORT ANSWER TYPE I

Q. No. 10 - 13. Answer any two

2 × 2 = 4

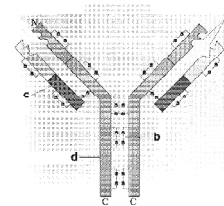
10. Name the parasite that causes filariasis in humans. Mention its two diagnostic symptoms. How is this disease transmitted to others?
11. What are interferons? How do interferons check infection of new cells?
12. Mention any four symptoms of dengue fever.
13. Where are B cells and T cells formed? How do they differ from each other?

SECTION C - SHORT ANSWER TYPE II

Q. No. 14 - 17. Answer any three

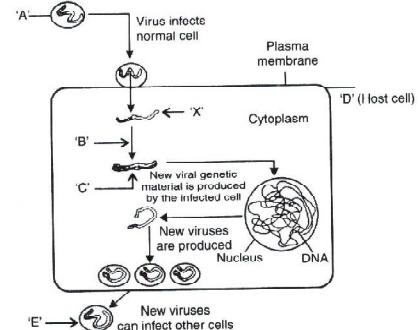
3 × 3 = 9

14. In the figure, structure of an antibody molecule is shown. Observe it and give the answer of the following questions.



- i) Label the parts A, B, C.
- ii) Which cells produce these chemicals?
- iii) State the function of these molecules.

15. A person shows unwelcome immunogenic reactions while exposed to certain substances.
 - a) Name this condition.
 - b) What common term is given to the substances responsible for this condition?
 - c) Name the cells and the chemical substances released which cause such reactions.
16. Explain the mechanism of replication of a retrovirus in a human cell with the help of a diagram only.



- a) Name the state of Plasmodium that gains entry into the human body.
- b) Trace the stages of Plasmodium in the body of female Anopheles after its entry.
- c) Explain the causes of periodic recurrence of chill and high fever during malarial attack in humans.

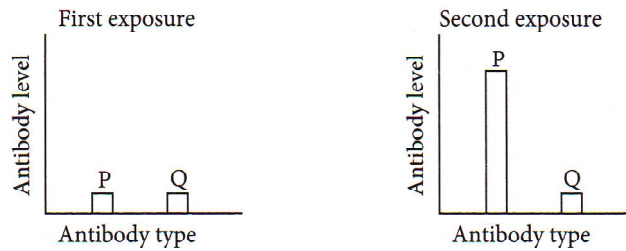
OR

How do macrophages in the human body act as HIV factory?

SECTION D - CASE STUDY

18. Read the following and answer any four questions from given below. 4 × 1 = 4

In the study to test a new vaccine against a viral disease, mouse model testing is done. In this process, mice are vaccinated and their blood samples were tested. Mice developed mild disease symptom. After few days those mice were again infected with the virus. This time they do not show any disease symptoms. Their blood samples were tested. Two graphs show antibody concentration for the first and second infection in mice blood.



Based on the above information, answer the following questions.

- Based on the above information what does P and Q indicate ?
- Which form of pathogen is used in vaccination?
- Which infections diseases were controlled by the use of vaccines and immunisation programmes ?
- How does vaccination work?

OR

- Mice do not show any disease symptoms during second exposure to the pathogenic virus. Write reason.

19. Read the following and answer any four questions from given below.

Riya studies in II standard in a government school. She belongs to a backward family and her parents did not get her properly vaccinated according to immunisation programme. Once while playing in school playground she fell down due to weakness and developed high fever, headache and stiffness in her neck.

Identify the illness she could be suffering from and answer the following questions.

- Which microbe is responsible for Riya's illness?
- Which vaccine, if administered earlier, would have saved Riya from the illness she unfortunately contracted?
- Which disease that Riya has contracted?
- How can Riya's illness to other children be spread ?

OR

- Polio produces inflammation of the nervous system. Is this statement is true or false?

SECTION E - LONG ANSWER TYPE QUESTIONS

Q. No. 20. Answer the any one.

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20. The pathogen of a disease depends on RBCs of human for growth and reproduction. The person with this pathogen suffers with chill and high fever.

- Identify the disease.
- Name the pathogen.
- What is the cause of fever?
- Represent the life cycle of the pathogen diagrammatically.

OR

Answer the following with respect to Cancer.

- How does a cancerous cell differ from a normal cell?
- Benign tumour is less dangerous than malignant tumour. Why?
- Describe causes of cancer.
- Mention two methods of treatment of the disease.