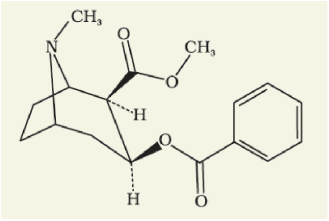
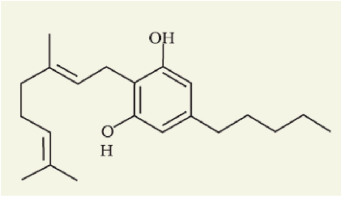
2 MARKS EACH

1. Define health. State benefits of good health.
2. Name one fatal infectious disease and one fatal non-infectious disease.
3. Parasites are all, by default pathogens. Justify.
4. State two roles of female Anopheles in malaria.
5. (a) Chill and high fever recurring every three to four days are the symptoms of malaria. How do these arise?
   (b) Name one biocontrol agent for malaria.
6. Name two pathogenic species of filarial worm.
7. Name two diseases spread by Aedes mosquitoes.
8. A disease like chicken pox rarely attacks our body twice. Justify.
9. Explain the terms antigen and antibody.
10. State the two main ways by which active immunity can be induced.
11. A new- born baby needs to fight attacks of microorganisms . How does it gets immunity against such attacks.
12. How is the cause of allergy determined?
13. More and more children in metro cities of India have been found to suffer from allergies and asthma. What could be a probable reason for this?
14. Rheumatoid arthritis which affects many people in our society is an auto-immune disease. Explain auto-immune disease.
15. State the functions of human immune system.
16. State the main components of human immune system.
17. State the functions of lymphoid organs as part of human immune system. 18. Expand AIDS. Explain the meaning.
19. State the category of people who are at high risk of acquiring AIDS.
20. Define incubation period. What is the incubation period for Malarial parasite.
21. HIV infected usually die not due to AIDS but some other infection. Explain. 22. Name two cells attacked by HIV.
23. Expand NACO. What is its main aim?
24. Explain contact inhibition and metastasis.
25. What are proto oncogenes?
26. How do radiations cause cancer?
27. (a) Drugs like barbiturates, amphetamines, benzodiazepines, lysergic acid diethyl amides (LSD), and other similar drugs are often abused. State their significance in medicine.
    (b) What is drug abuse?

28. Identify the drugs whose chemical structures are given below:



a

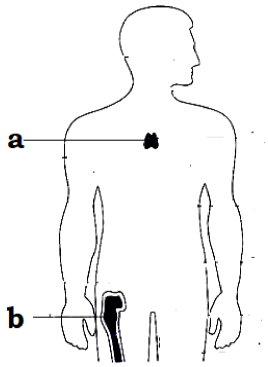


b

29. Differentiate between viral oncogenes and proto – oncogenes.
30. What does a 'suitable gene' mean in the context of DNA vaccines?
31. How do monocytes act as a cellular barrier in humans to provide innate immunity ?
32. Why is the structure of an antibody molecule represented as H2L2 ? Name any two types of antibodies produced in a human body.

3 MARKS EACH

1. State three main factors that affect health.
2. State three important factors that help to maintain good health.
3. Explain the term disease. Classify diseases based on transmission.
4. Define pathogens. Name five groups of organisms to which pathogens belong.
5. Name the pathogen, mode of transmission, common symptoms and diagnostic method of typhoid.
6. Name the pathogen, mode of transmission and common symptoms of pneumonia.
7. Name the pathogen, mode of transmission and common symptoms of common cold.
8. Name the pathogen, mode of transmission and common symptoms of Malaria.
9. Describe the life cycle of malarial parasite, Plasmodium in mosquito.
10. Name the pathogen, mode of transmission and common symptoms of Amoebiasis (amoebic dysentery).
11. Name the pathogen, mode of transmission and common symptoms of Ascariasis.
12. Name the pathogen, mode of transmission and common symptoms of Elephantiasis or filariasis.
13. Name the pathogen, mode of transmission and common symptoms of Ringworms.
14. Differentiate between primary immune response and secondary immune response.
15. Name and classify two cells responsible for carrying out the primary and secondary immune responses.
16. Differentiate between two types of immune responses on the basis of the mechanism.
17. (a) Define allergy and allergens.
    (b) Give two examples of common allergens.
18. Classify lymphoid organs. State their main functions.
19. In the given figure, identify the primary lymphoid organs 'a' and 'b'. Mention one unique feature of 'a'. State their common function.



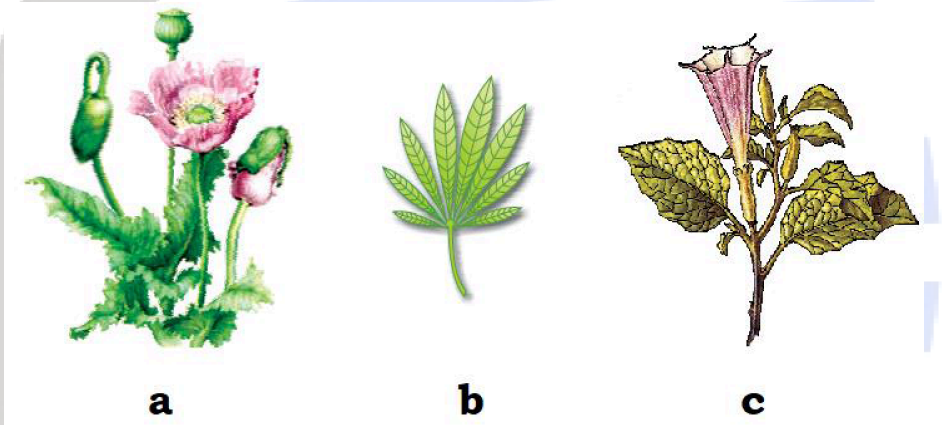
Human immune system

20. Expand MALT. Where is it located? Give two examples.
21. Briefly describe the structure of HIV.
22. Differentiate between normal cells and cancer cells.
23. Pneumonia and common cold are both air – borne diseases. How are they different?
24. Explain with reason:
    (a) A ten year old boy is infected with chicken pox. He is not expected to have the disease again in his lifetime.
    (b) A child is vaccinated for polio. He will not suffer from polio
    (c) Breast fed babies are more healthy than bottle fed ones.
25. Differentiate between auto immune diseases and immune deficiency diseases with examples.

3 MARKS EACH

1. State some general measures to control many infectious diseases where the infecting agents are transmitted through food and water. Name two diseases that can be controlled by these measures.
2. State some special measures to control many air-borne diseases where the infectious agents are transmitted through air. Name two diseases that can be controlled by these measures.
3. Very often, when some human organs like heart, eye, liver or kidney fail to function satisfactorily, transplantation is the only remedy to enable the patient to live a normal life. Then a search begins – to find a suitable donor. Why is it that the organs cannot be taken from just anybody? What is it that the doctors check?
4. How has recombinant DNA technology helped in the field of vaccination? Give one example of a vaccine produced using this technology.
5. The HIV/AIDS infected persons are usually isolated from family and society. This is not good for their physical and psychological well-being. As a student of biology, what will be your explanation to the members of family and society?
6. Treatment of AIDS with anti-retroviral drugs is only partially effective. They can only prolong the life of the patient but cannot prevent death, which is inevitable. As AIDS has no cure, prevention is the best option. List some of the preventive measures for AIDS.
7. List some awareness programmes undertaken by WHO for AIDS.
8. How are techniques of molecular biology helpful in preventing cancer? Explain with an example.
9. What are the treatments available for cancer?

10. (a) Why are cancer patients administered ã-interferon?
    (b) Mention one latest technique for detection of cancer.
11. Prior to a sports event blood & urine samples of sportspersons are collected.
    (a) Why is there a need to conduct such tests?
    (b) Name the drugs the authorities usually look for.
    (c) Write the generic names of two plants from which these drugs are obtained.
12. "When one buys packets of cigarettes one cannot miss the statutory warning that is present on the packing which warns against smoking and says how it is injurious to health". State three ways by which smoking can harm the human body.
13. Peer pressure plays a negative role in triggering smoking habits in adolescents. As a school captain list any two activities you would like to organize with the help of senior students of your school and any other two activities you would like your school authorities to organize for the students to tackle this problem. Explain how these activities will help in doing so.
14. Identify the plants 'a', 'b' and 'c'. Name one drug each produced by these.



15. State the long-term effects of use of alcohol during adolescence.
16. What are the immediate adverse ill effects of drugs and alcohol at home?
17. State some far-reaching implications of drug/alcohol abuse.
18. Define addiction, dependence and withdrawal symptoms with reference to drug/alcohol abuse. How are related to each other?

5 MARKS EACH

1. State factors that help to achieve good health. Name an ancient Indian practice to achieve physical and mental health.
2. Name the following with respect to disease malaria:
   (a) Three species of the vector.
   (b) The species that causes malignant malaria.
   (c) The two hosts.
   (d) The infective stage for humans and mosquito respectively.
   (e) Two cells attacked by the pathogen in humans.
3. Describe the life cycle of malarial parasite, Plasmodium in humans.

4. Name the pathogen, mode of transmission, common symptoms and diagnostic method of AIDS.
5. State some special measures to control many vector-borne diseases where the infectious agents are transmitted through vectors. Name two diseases that can be controlled by these measures.
6. Define immunity. Classify and differentiate between two common types of immunity.
7. Explain the four different barriers of innate immunity.
8. Describe with the help of a well – labelled diagram, the structure of a typical antibody molecule.
9. Differentiate between active immunity and passive immunity with examples.
10. Define carcinogens. State their different categories.
11. Give a brief account of five main detection techniques for cancer.
12. Adolescence is a vulnerable phase of mental and psychological development of an individual. Drug and alcohol abuse is very common among adolescents. Mention the causes that motivate youngsters towards drugs and alcohol.
13. Mention five measures for prevention and control of drugs and alcohol among adolescents.
14. A teacher suspects an adolescent boy of her class is suffering from drug abuse. State some warning signs that can be observed in him.
15. (a) Why do some sportspersons use narcotic analgesics, anabolic steroids, diuretics and certain hormones in sports?

    (b) State the side-effects of the use of anabolic steroids in females.
16. State the side-effects of the use of anabolic steroids in males.
17. Justify with reason:

    (a) Symptoms of malaria do not show immediately after the entry of sporozoite in the human body.

    (b) Lower limbs of patients suffering from elephantiasis are swollen.

    (c) A patient complained of stomach pain, constipation, headache and loss of appetite to the doctor. The doctor performed a test and confirmed that it was tyhoid and not amoebiasis. Name the test.

    (d) Indiscriminate use of X –rays should be avoided.

    (e) Retroviruses have no DNA, yet viral DNA is found in the host cell.
18. The following figure represents the life cycle of malarial parasite in a host.

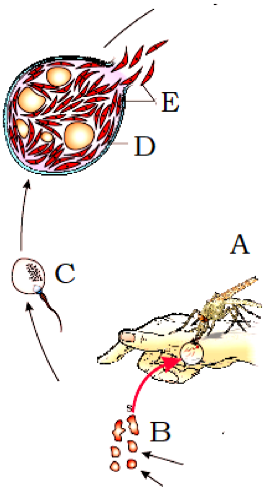
    (a) Identify ‘A’ and mention its roles in the life cycle of malarial parasite.

    (b) Identify the stage ‘B’ taken up by ‘A’.

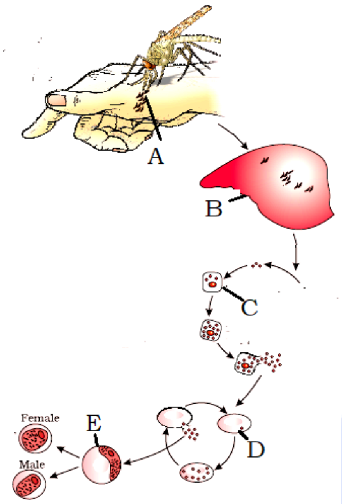
    (c) Identify the process ‘C’. Where is it occuring?

    (d) Identify the organ ‘D’.

    (e) Identify the stage ‘E’.



19. The following figure represents the life cycle of malarial parasite in a host.



(a) Identify stage 'A' being injected by a vector. Name the vector.

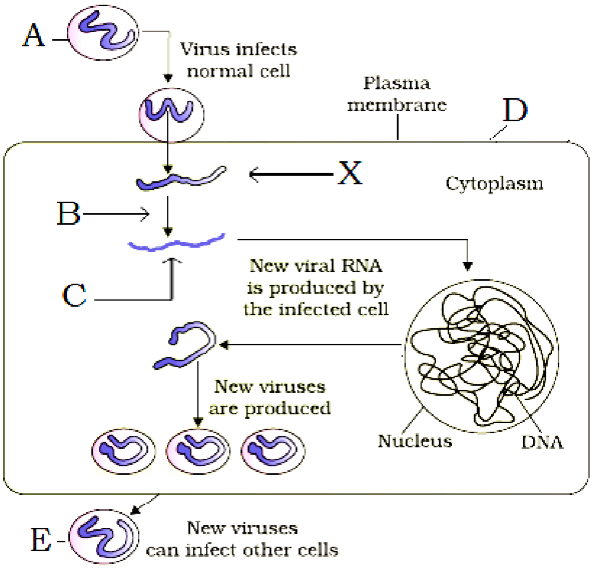
(b) Identify the organ 'B'.

(c) Identify the cells 'C'. Name the type of reproduction being depicted.

(d) Identify the cells 'D'. Explain the events occuring in the cells.

(e) Identify stage 'E'. What is its fate?

20. Answer the following questions based on the life cycle of HIV:



(a) Write the chemical nature of 'A'.

(b) Name the enzyme 'B' acting on 'X' to produce molecule 'C'. Name 'C' and 'X'.

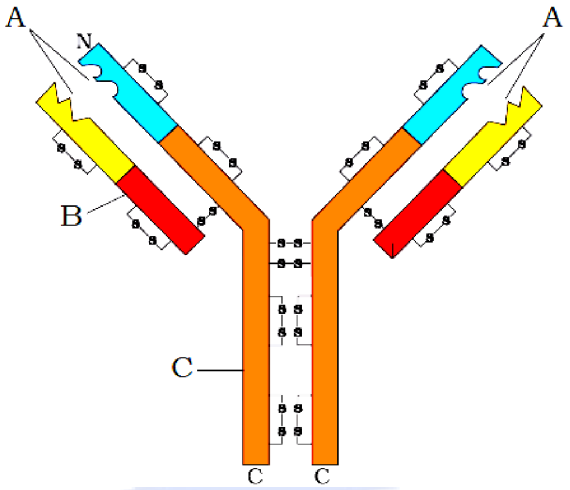
(c) Name the host cell 'D' that the HIV attacks when it first enters the human body. What are these commonly called?

(d) Name the cell 'E' that the new viruses can attack.

(e) Name the broader group to which this virus belongs.

(f) How can the host cell protect other cells?

21. Answer the following questions based on the structure of an antibody molecule:



(a) Identify 'A', 'B' and 'C'.

(b) Mention the chemical nature of the molecule.

(c) Why is it called H2L2?

(d) Name the cells that produce these molecules.

(e) Mention the type of immune response provided by these molecules.

(f) Name the antibody present in mother's milk.

(g) Name the antibody produced in allergic reactions.