

HUMAN HEALTH, DISEASES & IMMUNITY

Objective (MCQ)

1. HIV causes reduction of:
A. T-helper cells only
B. All T-cells
C. B-cells only
D. Both B and T-cells
2. Diseases are broadly grouped into infectious and non-infectious diseases. Identify the infectious diseases: i) Cancer. ii) Influenza. iii) Allergy. iv) Small pox.
A. i and ii
B. ii and iii
C. iii and iv
D. ii and iv
3. Unprotected sexual intercourse may cause:
A. AIDS
B. Gonorrhea
C. Syphilis
D. All of the above
4. Which is NOT a mode of HIV transmission?
A. Sexual contact with infected persons
B. Transfusion of contaminated blood
C. Shaking hands with infected persons
D. Sharing infected needles
5. Immunoglobulins are:
A. Antigen
B. Antibodies
C. Antiseptics
D. Antibiotics
6. Vaccine is a:
A. Preparation of antibiotics
B. Preparation of life-saving drugs
C. Preparation of inactivated or killed bacteria
D. Preparation of lysins
7. Small proteins produced by vertebrate cells in response to viral infections that inhibit viral multiplication are called:
A. Immunoglobulins
B. Antitoxins
C. Interferons
D. Lipoproteins
8. Which is not a hereditary disease?
A. Cretinism
B. Cystic fibrosis
C. Thalassaemia
D. Haemophilia
9. The immunoglobulin abundant in colostrum is:
A. Ig D
B. Ig A
C. Ig G
D. Ig M
10. Reverse transcription was brought to light by the work of:
A. George Beadle and Edward Tatum
B. Garrod
C. H. W. Temin and D. Baltimore
D. R. W. Holley and Grover; Marshall and W. Nirenberg
11. Haemozoin is:
A. A toxin from Haemophilus species
B. A toxin from Streptococcus species
C. A toxin from Plasmodium species
D. A precursor of hemoglobin
12. The chemical test used for diagnosis of typhoid is:
A. PCR Test
B. ESR Test
C. Widal Test
D. ELISA Test
13. Ringworm is spread through:
A. Water
B. Direct skin contact
C. Insects
D. Air
14. Opium is extracted from:
A. Atropa belladonna
B. Papaver somniferum
C. Erythroxylum coca
D. Cannabis sativa
15. In retroviruses, RNA-dependent DNA polymerase synthesizes:
A. DNA
B. RNA
C. RNA-DNA
D. None of the above

16. The adult *Wuchereria bancrofti* infects:
- | | |
|------------------------------------|----------------------------|
| A. Human subdermal spaces | B. Muscles of <i>Culex</i> |
| C. Salivary glands of <i>Culex</i> | D. Human lymph glands |
17. Which is not cancer?
- | | |
|--------------|-------------|
| A. Leukaemia | B. Glaucoma |
| C. Carcinoma | D. Sarcoma |
18. Which acts as a physiological barrier to microorganism entry into the human body?
- | | |
|----------|-----------------------------------|
| A. Skin | B. Epithelium of urogenital tract |
| C. Tears | D. Monocytes |
19. Select the cytokine barrier:
- | | |
|---------------|---------------|
| A. Skin | B. Interferon |
| C. Leucocytes | D. Saliva |
20. Which disease is confirmed by Widal test?
- | | |
|-----------------|------------|
| A. Tuberculosis | B. Typhoid |
| C. Plague | D. Tetanus |
21. Most common type of HIV contributing to 90% of cases:
- | | |
|------------|----------------------|
| A. HIV I | B. HIV II |
| C. HIV III | D. None of the above |
22. The main barrier preventing microorganism entry into our body is:
- | | |
|---------------|----------------|
| A. Antibodies | B. Macrophages |
| C. Monocytes | D. Skin |
23. Correct characteristic of cancer:
- | | |
|--|---|
| A. Cannot spread from sick to healthy person | B. Can spread from sick to healthy person |
| C. Rate of cell division decreases | D. Caused by hormonal imbalance |
24. Immunization is provided by:
- | | |
|------------------|----------------|
| A. Immune bodies | B. Vaccines |
| C. Medicines | D. Antibiotics |
25. HIV has a protein coat and genetic material which is:
- | | |
|-------------------------------------|------------------------|
| A. Single-stranded RNA with protein | B. Double-stranded RNA |
| C. Single-stranded DNA with protein | D. Double-stranded DNA |
26. The term 'humulin' is used for:
- | | |
|------------------|------------------------|
| A. Human insulin | B. Powerful antibiotic |
| C. Isoenzyme | D. Hydrolytic enzyme |
27. Anti-venom against snake poison contains:
- | | |
|-------------------------------|-------------|
| A. Antigen-antibody complexes | B. Antigens |
| C. Antibodies | D. Enzymes |
28. Carcinoma refers to:
- | | |
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| A. Malignant tumours of the colon | B. Benign tumours of connective tissue |
| C. Malignant tumours of connective tissue | D. Malignant tumours of skin or mucous membrane |
29. Active immunity means:
- | | |
|---------------------------------------|--|
| A. Resistance developed after disease | B. Resistance developed before disease |
| C. Resistance rate of heartbeat | D. Increasing quantity of blood |
30. Haemozoin is:
- | | |
|---|--|
| A. A precursor of hemoglobin | B. A toxin from <i>Streptococcus</i> species |
| C. A toxin from <i>Plasmodium</i> species | D. A toxin from <i>Haemophilus</i> species |
31. Assertion: Spleen is an immunologic conference centre.
Reason: Spleen helps only in digestion.
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|---|---|
| A. Both true; reason explains assertion | B. Both true; reason does not explain assertion |
| C. Assertion true, reason false | D. Both false |

32. Assertion: Smoking causes oxygen deficiency.

Reason: Carbon monoxide inhaled while smoking combines with haemoglobin to form a stable compound.

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|---|---|
| A. Both true; reason explains assertion | B. Both true; reason does not explain assertion |
| C. Assertion true, reason false | D. Both false |

33. Assertion: Skin forms the first line of defence.

Reason: It is a non-specific defence.

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|---|---|
| A. Both true; reason explains assertion | B. Both true; reason does not explain assertion |
| C. Assertion true, reason false | D. Both false |

34. Assertion: Some childhood diseases do not attack again.

Reason: Memory cells play an important role.

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|---|---|
| A. Both true; reason explains assertion | B. Both true; reason does not explain assertion |
| C. Assertion true, reason false | D. Both false |

35. Assertion: Allergy is an immunity disorder.

Reason: Allergy is confined to a person only.

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|---|---|
| A. Both true; reason explains assertion | B. Both true; reason does not explain assertion |
| C. Assertion true, reason false | D. Both false |

36. Assertion: Mucous membrane immobilises microorganisms.

Reason: Microorganisms and dust entering respiratory tract are trapped in mucus.

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| A. Both true; reason explains assertion | B. Both true; reason does not explain assertion |
| C. Assertion true, reason false | D. Both false |

37. Assertion: Male Anopheles bite does not transmit malaria to humans.

Reason: It carries a non-virulent strain of Plasmodium.

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|---|---|
| A. Both true; reason explains assertion | B. Both true; reason does not explain assertion |
| C. Assertion true, reason false | D. Both false |

38. Assertion: Smack is a by-product of heroin synthesis.

Reason: Heroin is an opium alkaloid.

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|---|---|
| A. Both true; reason explains assertion | B. Both true; reason does not explain assertion |
| C. Assertion true, reason false | D. Both false |

39. Assertion: Immunity is the body's capacity to resist organisms or toxins.

Reason: Spleen is the only organ involved in immunity.

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|---|---|
| A. Both true; reason explains assertion | B. Both true; reason does not explain assertion |
| C. Assertion true, reason false | D. Both false |

40. Assertion: Streptococcus pneumoniae and Haemophilus influenzae cause infectious disease.

Reason: Infection can be acquired by inhaling droplets/aerosols from an infected person.

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|---|---|
| A. Both true; reason explains assertion | B. Both true; reason does not explain assertion |
| C. Assertion true, reason false | D. Both false |

41. Assertion: Interferons are antibodies produced by cells infected by bacteria.

Reason: Interferons stimulate inflammation at injury site.

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|---|---|
| A. Both true; reason explains assertion | B. Both true; reason does not explain assertion |
| C. Assertion true, reason false | D. Both false |

Subjective (1 Mark)

42. Where do these events occur in Plasmodium life cycle? i) Gametocyte development. ii) Sexual reproduction. iii) Asexual reproduction.

43. Why is *Gambusia* introduced into drains and ponds?
44. Why is secondary immune response more intense than primary immune response in humans?
45. State two roles of the spleen in the human body.
46. Name the cells HIV enters in the human body to act as a cellular factory.
47. How do neutrophils act as a cellular barrier to pathogens?
48. Suggest a molecular diagnostic procedure to detect HIV in a suspected AIDS patient.
49. Name two types of cells acting as cellular barriers in innate immunity.
50. Why is sharing injection needles between individuals not recommended?
51. How does smoking tobacco lead to oxygen deficiency in the body?
52. What role do macrophages play in immunity?
53. How do cytokine barriers provide innate immunity?
54. What is an autoimmune disease?
55. Name three opioids.
56. Name two diseases spread by droplet infection.
57. Name the types of cells that produce antibodies.
58. Name the plant source of cocaine. How does it affect the human body?
59. Why does an AIDS patient suffer from many other infections?
60. Which gland is large at birth but reduces in size with age?
61. Name three factors that affect health.
62. In what forms is tobacco used? Name its addicting component.
63. Name the two intermediate hosts of the human liver fluke.
64. Retroviruses have no DNA, yet infected host-cell DNA possesses viral DNA. How is this possible?

Section B — Subjective (2 Marks)

65. Name the plant source of the drug called "smack". How does it affect the abuser? OR Name an opioid plant and explain its effect on the human body.
66. Name the innate immune-system barrier involving: i) HCl of stomach ii) Macrophages.
67. How do B-cells direct humoral immunity?
68. Differentiate active and passive immunity.
69. From which plant are cannabinoids obtained? Name two cannabinoids. Which part of the body is affected by consuming them?
70. Explain the role of lymph nodes in immune response.
71. Write the full form of ELISA and give one clinical application.

Section C — Subjective (3 Marks)

72. Differentiate innate and acquired immunity, giving examples.
73. Draw a well-labelled diagram of an antibody molecule.
74. How is a cancerous cell different from a normal cell?

75. i) Give scientific names of two filarial worm species. ii) How do they affect the body? iii) How does the disease spread?
76. State the causal organism, symptoms and mode of transmission of amoebiasis.
77. a) Why do malaria symptoms not appear immediately after sporozoites enter a human? Explain. b) Name the parasite causing malignant malaria.
78. a) Name the infective stage of Plasmodium taken up by Anopheles from an infected human. b) Why does infection cause fever? c) Flowchart the life-cycle stages in the insect.
79. For an HIV-positive person: i) Name the test. ii) Give the pathogen's full name and describe its structure. iii) Which cells are likely destroyed?
80. How does restriction endonuclease help in recombinant DNA technology?
81. A farmer was bitten by a poisonous snake and received an injection at a health centre. What was injected and why? Explain.
82. What is allergy? Name the antibody responsible and two chemicals released by mast cells.

Section D — Subjective (5 Marks)

83. How are these diseases transmitted? a) Amoebiasis b) Malaria c) Ascariasis d) Pneumonia.
84. i) Where are B-cells and T-cells produced? Give two differences. ii) Name three classes of immunoglobulins and one function of each.
85. Write the scientific name of the bacterium causing pneumonia. What happens in the disease? Give symptoms.
86. Draw the complete life cycle of Plasmodium in two hosts and explain its stages.
87. Give three differences between benign and malignant tumours.
88. Friends emptied unused overhead tanks for hygiene. i) What was their objective? ii) Briefly explain malaria parasite stages in humans. iii) Name the malaria pathogen. iv) What values did they promote?
89. Expand: a) MALT b) CMI c) AIDS d) NACO e) HIV.
90. Complete the table showing diseases, causative organisms and symptoms.

Name of the Disease	Causative organism	Symptoms
i. Ascariasis	Ascaris	_____
ii. _____	Trichophyton	Appearance of dry, scaly lesions on various parts of the body.
iii. Typhoid	_____	High fever, weakness, headache, stomach pain, constipation.
iv. Pneumonia	Streptococcus pneumoniae	_____
v. _____	Rhino viruses	Nasal congestion and discharge, sore throat, cough, headache.
vi. Filariasis	_____	Inflammation in lower limbs.

ANSWER KEY

Human Health, Diseases & Immunity — Objective Questions 1–41

Q. No.	Answer	Q. No.	Answer	Q. No.	Answer
1	A	15	A	29	A
2	D	16	D	30	C
3	D	17	B	31	C
4	C	18	C	32	A
5	B	19	B	33	A
6	C	20	B	34	A
7	C	21	A	35	B
8	A	22	D	36	A
9	B	23	A	37	C
10	C	24	B	38	Check
11	C	25	A	39	C
12	C	26	A	40	B
13	B	27	C	41	D
14	B	28	D		

Note: Question 38 appears ambiguous as written; verify the intended assertion before formal marking.