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Biology Grade 10 — Chapter 9

Immunity

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Independent practice MCQs from the supplied Class 10 Biology notes pack. Total: 50 questions.

A. Important / Main Topics

1. What is the body's ability to resist or combat infections, diseases, and foreign substances called?

(A) Immunity
(B) Allergy
(C) Infection
(D) Inflammation

Correct Answer: A

Explanation: Immunity refers to the body's ability to resist or combat infections, diseases, and foreign substances.

2. Which organ produces B-cells and T-cells?

(A) Liver
(B) Bone marrow
(C) Spleen
(D) Thymus

Correct Answer: B

Explanation: B-cells and T-cells are produced in the bone marrow.

3. Which organ is responsible for T-cell maturation?

(A) Bone marrow
(B) Spleen
(C) Thymus
(D) Liver

Correct Answer: C

Explanation: The thymus is responsible for T-cell maturation.

4. Which organ filters blood and fights blood infections?

(A) Liver
(B) Thymus
(C) Bone marrow
(D) Spleen

Correct Answer: D

Explanation: Spleen — this correctly answers the question.

5. Which of the following is the largest organ of the body?

(A) Skin
(B) Liver
(C) Spleen
(D) Thymus

Correct Answer: A

Explanation: The skin is the largest organ of the body and plays a key role in the first line of defence.

6. Which cells are responsible for phagocytosis?

(A) Basophils
(B) Neutrophils
(C) Eosinophils
(D) Lymphocytes

Correct Answer: B

Explanation: Neutrophils — this correctly answers the question.

7. Which cells release histamine during allergic reactions?

(A) Neutrophils
(B) Eosinophils
(C) Basophils
(D) Monocytes

Correct Answer: C

Explanation: Basophils — this correctly answers the question.

8. Which cells are involved in the control of allergic reactions?

(A) Neutrophils
(B) Basophils
(C) Monocytes
(D) Eosinophils

Correct Answer: D

Explanation: Eosinophils are involved in the control of allergic reactions.

9. Which cells are the largest type of white blood cells?

(A) Monocytes
(B) Neutrophils
(C) Lymphocytes
(D) Basophils

Correct Answer: A

Explanation: Monocytes are the largest type of white blood cells.

10. Which cells produce antibodies?

(A) T cells
(B) B cells
(C) Neutrophils
(D) Macrophages

Correct Answer: B

Explanation: B cells — this correctly answers the question.

11. Which cells directly destroy virus-infected cells and cancerous cells?

(A) B cells
(B) Neutrophils
(C) T cells
(D) Basophils

Correct Answer: C

Explanation: T lymphocytes directly destroy any cell that can be harmful e.g., virus infected cells and cancerous cells.

12. What is the first line of defence?

(A) Phagocytes and inflammation
(B) B cells and T cells
(C) Antibodies and memory cells
(D) Skin and mucous membranes

Correct Answer: D

Explanation: The external barriers of our body (skin and mucous membranes) serve as the first line of defence against pathogens.

13. What is the third line of defence called?

(A) Adaptive immunity
(B) Innate immunity
(C) Non-specific immunity

(D) First line of defence

Correct Answer: A

Explanation: The third line of defence is also called adaptive or acquired immune system.

14. What is a substance that triggers an allergic reaction called?

(A) Antibody
(B) Allergen
(C) Antigen
(D) Pathogen

Correct Answer: B

Explanation: An allergen is a harmless substance that triggers an allergic reaction.

15. What is a severe, life-threatening allergic reaction called?

(A) Allergy
(B) Asthma
(C) Anaphylaxis
(D) Eczema

Correct Answer: C

Explanation: Anaphylaxis is a severe, life-threatening allergic reaction.

16. Which of the following is NOT a role of the immune system?

(A) Recognition of foreign antigen
(B) Elimination of pathogens
(C) Memory
(D) Production of insulin

Correct Answer: D

Explanation: Insulin is produced by the pancreas, not the immune system.

17. What is the function of macrophages?

(A) Phagocytosis and antigen presentation
(B) Produce antibodies
(C) Release histamine
(D) Destroy infected cells

Correct Answer: A

Explanation: Macrophages are involved in detection, phagocytosis, and destruction of bacteria, and can present antigens to T cells.

18. What is the function of dendritic cells?

(A) Produce antibodies
(B) Instruct T cells on what to attack
(C) Release histamine
(D) Destroy infected cells

Correct Answer: B

Explanation: Dendritic cells instruct T cells on what to attack and are antigen-presenting cells.

19. What is the function of natural killer (NK) cells?

(A) Produce antibodies
(B) Release histamine
(C) Destroy infected and diseased cells
(D) Present antigens

Correct Answer: C

Explanation: NK cells can destroy infected and diseased cells, like cancer cells.

20. What is the function of plasma cells?

(A) Instruct T cells
(B) Release histamine

(C) Destroy infected cells
(D) Produce antibodies

Correct Answer: D

Explanation: Plasma cells develop from B cells and make specific type of immunoglobulin (antibodies).

21. What is the function of memory B cells?

(A) Remember pathogens for future attacks
(B) Produce antibodies immediately
(C) Release histamine
(D) Destroy infected cells

Correct Answer: A

Explanation: Memory B cells are long-lived and can produce that specific antibody when the same pathogen attacks in future.

22. What is the function of cytotoxic T cells?

(A) Produce antibodies
(B) Kill cells infected with viruses
(C) Release histamine
(D) Present antigens

Correct Answer: B

Explanation: Cytotoxic T cells are responsible for killing cells infected with viruses.

23. What is the function of helper T cells?

(A) Produce antibodies
(B) Release histamine
(C) Help other T cells and B cells
(D) Destroy infected cells

Correct Answer: C

Explanation: Help other T cells and B cells — this correctly answers the question.

24. What is the function of suppressor T cells?

(A) Produce antibodies
(B) Release histamine
(C) Destroy infected cells
(D) Shut down the immune response

Correct Answer: D

Explanation: After infection is controlled, suppressor T cells are formed to shut down the immune response.

25. Which of the following is a component of the first line of defence?

(A) Both A and B
(B) Skin
(C) Mucous membranes
(D) None of the above

Correct Answer: A

Explanation: Both A and B — this correctly answers the question.

B. Less Important / Secondary Topics

26. Which of the following is a component of the second line of defence?

(A) All of the above
(B) Phagocytes
(C) Inflammation
(D) Fever

Correct Answer: A

Explanation: All of the above — this correctly answers the question.

27. What is the role of interferons?

(A) Kill bacteria
(B) Kill viruses
(C) Kill fungi
(D) Kill parasites

Correct Answer: B

Explanation: Interferons are protective proteins that kill viruses.

28. Which of the following is a type of vaccine?

(A) Influenza vaccine
(B) MMR vaccine
(C) All of the above
(D) COVID-19 vaccine

Correct Answer: C

Explanation: Influenza, MMR, DTaP, and COVID-19 are all examples of vaccines.

29. What is the first dose of a vaccine called?

(A) Secondary immune response
(B) Tertiary immune response
(C) Booster dose
(D) Primary immune response

Correct Answer: D

Explanation: Primary immune response — this correctly answers the question.

30. What is a booster dose of a vaccine called?

(A) Secondary immune response
(B) Primary immune response
(C) Tertiary immune response
(D) Initial dose

Correct Answer: A

Explanation: Secondary immune response — this correctly answers the question.

31. What is herd immunity?

(A) Immunity of an individual
(B) Immunity of a community
(C) Immunity of animals
(D) Immunity of plants

Correct Answer: B

Explanation: Herd immunity occurs when many people are vaccinated, preventing the spread of diseases in their communities.

32. Who developed the first vaccine?

(A) Louis Pasteur
(B) Alexander Fleming
(C) Edward Jenner
(D) Robert Koch

Correct Answer: C

Explanation: Edward Jenner — this correctly answers the question.

33. Which of the following is a common allergen?

(A) Pollen
(B) Dust mites
(C) Peanuts
(D) All of the above

Correct Answer: D

Explanation: All of the above — this correctly answers the question.

34. Which of the following is a symptom of an allergic reaction?

(A) All of the above
(B) Sneezing
(C) Skin rash
(D) Nausea

Correct Answer: A

Explanation: All of the above — this correctly answers the question.

35. Which type of allergy involves breathing in allergens?

(A) Ingestion allergy
(B) Inhalation allergy
(C) Skin contact allergy
(D) Injection allergy

Correct Answer: B

Explanation: Inhalation allergies are caused by airborne and pet allergens that cause respiratory issues on inhalation.

36. A patient has a condition where the thymus is not functioning properly. What is the most likely effect?

(A) Reduced B cell maturation
(B) Reduced antibody production
(C) Reduced T cell maturation
(D) Reduced phagocytosis

Correct Answer: C

Explanation: The thymus is responsible for T-cell maturation. Dysfunction would reduce T cell maturation.

37. Which of the following would be affected if the bone marrow is damaged?

(A) Maturation of T cells
(B) Filtration of blood
(C) Production of bile
(D) Production of blood cells

Correct Answer: D

Explanation: Production of blood cells — this correctly answers the question.

38. A patient has a condition where the spleen is removed. What is the most likely effect?

(A) Reduced filtration of blood
(B) Reduced production of antibodies
(C) Reduced T cell maturation
(D) Reduced production of bile

Correct Answer: A

Explanation: Reduced filtration of blood — this correctly answers the question.

39. Which of the following is the correct sequence of the lines of defence?

(A) Third line → Second line → First line
(B) First line → Second line → Third line
(C) Second line → First line → Third line
(D) First line → Third line → Second line

Correct Answer: B

Explanation: First line → Second line → Third line — this correctly answers the question.

40. A patient has a condition where the B cells are not functioning properly. What is the most likely effect?

(A) Reduced T cell maturation
(B) Reduced phagocytosis

(C) Reduced antibody production
(D) Reduced inflammation

Correct Answer: C

Explanation: Reduced antibody production — this correctly answers the question.

41. Which of the following would increase the risk of infection?

(A) Vaccination
(B) Healthy diet
(C) Regular exercise
(D) Immunodeficiency

Correct Answer: D

Explanation: Immunodeficiency — this correctly answers the question.

42. A patient has a condition where the mucous membranes are damaged. What is the most likely effect?

(A) Increased entry of pathogens
(B) Reduced entry of pathogens
(C) Increased antibody production
(D) Reduced T cell maturation

Correct Answer: A

Explanation: Mucous membranes are part of the first line of defence. Damage would increase the entry of pathogens.

43. Which of the following is a function of the immune system?

(A) Recognition of foreign antigens
(B) All of the above
(C) Memory
(D) Cancer prevention

Correct Answer: B

Explanation: All of the above — this correctly answers the question.

44. A patient has a condition where the skin is damaged. What is the most likely effect?

(A) Reduced entry of pathogens
(B) Increased antibody production
(C) Increased entry of pathogens
(D) Reduced T cell maturation

Correct Answer: C

Explanation: The skin is a physical barrier and part of the first line of defence. Damage would increase the entry of pathogens.

45. Which of the following is the correct sequence of immune response?

(A) Activation → Recognition → Elimination → Memory
(B) Elimination → Recognition → Activation → Memory
(C) Memory → Recognition → Activation → Elimination
(D) Recognition → Activation → Elimination → Memory

Correct Answer: D

Explanation: The immune response involves recognition of the pathogen, activation of immune cells, elimination of the pathogen, and memory for future responses.

46. A patient has a condition where the complement proteins are deficient. What is the most likely effect?

(A) Reduced ability to kill bacteria
(B) Reduced antibody production
(C) Reduced T cell maturation
(D) Reduced phagocytosis

Correct Answer: A

Explanation: Reduced ability to kill bacteria — this correctly answers the question.

47. Which of the following would be affected if the lymph nodes are removed?

(A) Production of antibodies
(B) Filtration of lymph
(C) T cell maturation
(D) Production of bile

Correct Answer: B

Explanation: Filtration of lymph — this correctly answers the question.

48. Which of the following is the correct sequence of the stages of an allergic reaction?

(A) Sensitization → Exposure → Re-exposure → Reaction
(B) Reaction → Exposure → Sensitization → Re-exposure
(C) Exposure → Sensitization → Re-exposure → Reaction
(D) Exposure → Reaction → Sensitization → Re-exposure

Correct Answer: C

Explanation: An allergic reaction involves initial exposure (sensitization), followed by re-exposure, which triggers the allergic reaction.

49. A patient has a condition where the immune system attacks the body's own tissues. What is the most likely diagnosis?

(A) Immunodeficiency
(B) Allergy
(C) Infection
(D) Autoimmune disease

Correct Answer: D

Explanation: Autoimmune diseases occur when the immune system attacks the body's own tissues.

50. Which of the following is a function of memory cells?

(A) Provide long-lasting immunity
(B) Produce antibodies immediately
(C) Release histamine
(D) Destroy infected cells

Correct Answer: A

Explanation: Memory B and T cells are long-lived and provide long-lasting immunity by responding rapidly on re-exposure to the same pathogen.