

11.1 The Immune System

Question Paper

Course	CIEA Level Biology
Section	11. Immunity
Topic	11.1 The Immune System
Difficulty	Medium

Time allowed: 20
Score: /11
Percentage: /100

Question 1

When a phagocyte responds to the presence of a pathogen the following events happen:

- 1 enzymatic digestion
- 2 exocytosis
- 3 phagocytosis
- 4 vacuole formation
- 5 endocytosis

Which of the following would be the correct order of events?

	first	→	→	last
A	5	1	4	3
B	5	4	1	2
C	3	2	5	1
D	3	5	1	4

[1 mark]

Question 2

Two different molecules, when chemically bonded together, can form one type of antigen.

Except for oxygen, which of the following elements would be found in this antigen?

- A** carbon, nitrogen and phosphorus
- B** carbon, hydrogen, nitrogen and sulfur
- C** hydrogen and nitrogen only
- D** carbon and hydrogen only

[1 mark]

Question 3

Which of these statements about phagocytes is not correct?

- A** They have many mitochondria to produce ATP for endocytosis.
- B** They have many lysosomes containing hydrolytic enzymes.
- C** They provide specific defence against disease-causing organisms.
- D** They are white blood cells with a lobed nucleus.

[1 mark]

Question 4

Which of these statements is correct about both B-lymphocytes and T-lymphocytes?

- A** When active can divide to produce memory cells to respond to a specific antigen when exposed in the future.
- B** They become active only when a specific antibody binds to their surface receptor.
- C** They divide to form plasma cells.
- D** They release hormone-like cytokines which stimulate the release of antibodies.

[1 mark]

Question 5

The following events happen during a primary immune response.

- 1 Specific antibodies are produced.
- 2 Some B-lymphocytes form plasma cells.
- 3 B-lymphocytes with the specific cell surface receptors divide repeatedly by mitosis.
- 4 Helper T cell identifies a specific antigen presented.
- 5 Helper T cells secrete cytokines.

Which is the correct order of events?

	first	→	→	→	Last
A	4	5	3	2	1
B	5	4	3	2	1
C	4	5	2	3	1
D	4	5	2	1	3

[1 mark]

Question 6

Which of the following would be a correct difference between B-lymphocytes and T-lymphocytes, both of which are involved in an immune response?

	B-lymphocyte	T-lymphocyte
A	stimulate macrophages to carry out phagocytosis	do not stimulate macrophages to carry out phagocytosis
B	form plasma cells which secrete antibodies into the bloodstream	do not form plasma cells
C	formed from bone marrow cells	formed from cells in the thymus
D	do not produce memory cells	produce memory cells

[1 mark]

Question 7

In an immune response, which of the following is a function of T-lymphocytes?

- 1 secrete antibodies
- 2 differentiate into memory cells
- 3 destroy infected body cells

- A** 3 only
- B** 2 only
- C** 1 and 2 only
- D** 2 and 3 only

[1 mark]

Question 8

Which of the following rows correctly represents a description of B-lymphocytes?

	can act as antigen-presenting cells	act in the cell-mediated response	release antibodies immediately after formation	processed in the thymus
A	x	✓	✓	✓
B	x	✓	x	✓
C	✓	x	x	x
D	✓	x	✓	x

Key: ✓ = correct, x = incorrect

[1 mark]

Question 9

Macrophages have a cellular structure that enables them to destroy bacteria. Some bacteria can stop macrophages from working.

Which of the following would be a structure affected by bacteria?

- A** Vesicle
- B** Ribosome
- C** Golgi body
- D** Lysosome

[1 mark]

Question 10

Which of the following statements about the body's defence against infectious disease is not correct?

- A** A specific immune response involves activation of B-lymphocytes and T-lymphocytes following recognition of, and binding to, a specific antigen.
- B** Following invasion by microorganisms, natural active immunity can be gained by initiating an immune response.
- C** Lysosomes fuse with vacuoles that have been formed by phagocytes and which contain invading microorganisms.
- D** Antibodies against specific antigens are produced by plasma cells in passive immunity, but the protection is short-lived as no memory cells are produced.

[1 mark]

Question 11

The following statements are about myasthenia gravis.

Which ones are correct?

- 1 The immune system attacks the central nervous system
- 2 T-lymphocytes are involved in the inflammatory response
- 3 Antibodies attack proteins within the body
- 4 The immune system blocks receptors at the neuromuscular junction

A 1 and 3

B 1 and 4

C 2 and 3

D 3 and 4

[1 mark]