

APOLLO

Defence against disease

HL

Biology

First assessment 2025

7 questions | mark schemes

Mark-scheme answers

Biology HL | Paper 1A | May 2025 TZ1 | Q27 | 1 marks

27. A

Biology HL | Paper 1A | May 2025 TZ3 | Q27 | 1 marks

27. C

5.	a				Award [1] per row. A table format is not required. Note: The command term is "distinguish" so a clear difference between the 2 concepts is required.	1 max
5.	b				Accept the terms T-cells and B-cells.	2 max

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2225 – 6015

Question		Answers	Notes	Total
5.	c	a. DNA/RNA vaccines can be used because viruses have genetic material/RNA/DNA; b. viruses have a capsid made of protein / protein capsule so antigen/parts of protein can be used as vaccine; c. inactivated /attenuated virus can be used as immune system reacts against capsid / protein capsule;	Type of vaccines must be related to viral structure.	2 max

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2225 – 6015

Question	Answers	Notes	Total
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Mark-scheme answers

Biology HL | Paper 1A | Nov 2025 TZ1 | Q28 | 1 marks

28. B

Biology HL | Paper 1A | Nov 2025 TZ3 | Q26 | 1 marks

26. B

Biology HL | Paper 1A | Specimen 2025 | Q29 | 1 marks

29. B

8.	a	a. vaccinations are specific to a specific disease; b. vaccines contain non-self antigens/antigens from pathogens; c. can be live relative/attenuated version of the virus; d. trigger a primary immune response (without causing the disease); e. lymphocytes with specific receptors (are activated and) produce memory cells; f. (memory cells) cause a faster production of antibodies on a second exposure/exposure to the disease; g. (memory cells) provide long term immunity;		7
8.	b	a. (during depolarization) Na^+ channels open; b. allowing Na^+ to flow into the axon; c. (during repolarization) K^+ channels open; d. allowing K^+ to flow out of the axon; e. the Na^+/K^+ pump returns the (axon) membrane to the resting potential; f. by moving 3Na^+ out and 2K^+ in;		4

(continued...)

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SPEC/4/BIOLO/HP2/ENG/TZ0/XX/M

(Question 8 continued)

Question		Answers	Notes	Total
8.	c	a. courtship behaviour is often complex and unique to a species; b. (at several stages in courtship ritual) rejection occurs if characteristic behaviour not exhibited; c. species-specific egg fertilization; d. compatibility of acrosome with vitelline layer; e. inability of successfully attached wrong species sperm to develop continuity with egg membrane; f. sterility of interspecific hybrids; g. due to differences in chromosome number;		4

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SPEC/4/BIOLO/HP2/ENG/TZ0/XX/M

Question	Answers	Notes	Total
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