

A-Level Biology

Name: _____ Score: _____

1. A phagocyte engulfs and digests a pathogen in a process called _____.

2. Memory cells make the secondary immune response faster and stronger than the first.
☐ True ☐ False
3. Monoclonal antibodies are:
☐ identical antibodies, all made by one type of cell, that bind the same antigen
☐ a random mix of antibodies
☐ a type of pathogen
☐ white blood cells
4. A vaccine gives a person which kind of immunity?
☐ active — the body makes its own antibodies and memory cells
☐ passive
☐ no immunity at all
☐ temporary maternal immunity
5. Phagocytes such as macrophages and neutrophils are types of white blood cell.
☐ True ☐ False
6. T-helper cells in the immune response:
☐ recognise the displayed antigen and switch on other immune cells
☐ engulf the pathogen first
☐ release ready-made antibodies
☐ form the cell wall
7. The variable region of an antibody:
☐ is the binding site whose shape fits one specific antigen
☐ is the same in every antibody
☐ breaks down pathogens with enzymes
☐ is made of carbohydrate

8. Passive immunity (ready-made antibodies) acts fast but is short-lived, because no memory cells are made.

☐ True ☐ False

9. In phagocytosis, a phagocyte:

- ☐ surrounds the pathogen, takes it in, and digests it with enzymes
- ☐ makes antibodies
- ☐ becomes a memory cell
- ☐ releases ready-made antibodies

10. Select **all** the ways antibodies help destroy pathogens.

- ☐ clump pathogens together (agglutination)
- ☐ mark pathogens for phagocytes
- ☐ block toxins
- ☐ build the cell wall

Tick every correct option.

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1. **phagocytosis**

Phagocytosis is part of the first line of internal defence — fast and non-specific.

2. **True**

Memory cells left from the first exposure react quickly when the same pathogen returns — the basis of long-term immunity.

3. **identical antibodies, all made by one type of cell, that bind the same antigen**

Monoclonal = "one clone" — all identical, so they all bind the same target.

4. **active — the body makes its own antibodies and memory cells**

A vaccine makes the body respond itself, so it builds active, long-lasting immunity.

5. **True**

Yes — phagocytes are white blood cells; they are the first cells to respond to a pathogen.

6. **recognise the displayed antigen and switch on other immune cells**

T-helper cells recognise the presented antigen and activate B-lymphocytes and other cells.

7. **is the binding site whose shape fits one specific antigen**

The two tips of the Y are variable regions — each shaped to bind one specific antigen.

8. **True**

Passive immunity gives instant antibodies but no memory cells, so it wears off; active immunity is slower but lasts.

9. **surrounds the pathogen, takes it in, and digests it with enzymes**

A phagocyte engulfs the pathogen into a vesicle and digests it with enzymes.

10. **clump pathogens together (agglutination); mark pathogens for phagocytes; block toxins**

Antibodies agglutinate pathogens, mark them for phagocytes and neutralise toxins — they do not build cell walls.