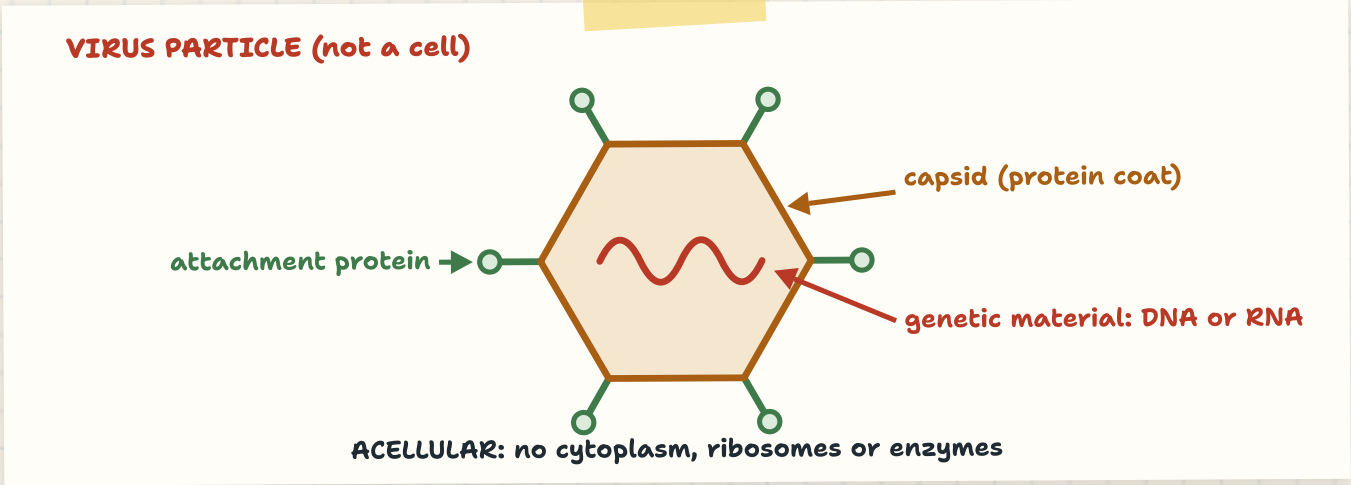
Viruses: Structure and Non-Living Status

A virus is acellular: genetic material, a capsid and attachment proteins, so non-living.



Key terms

acellular	not made of cells; no cell structure, so no cytoplasm or organelles.
genetic material	a nucleic acid, either DNA or RNA depending on the virus, at the centre of the particle.
capsid	a coat made of protein subunits that protects the genetic material.
attachment protein	sticks out from the surface and binds to a complementary receptor on a host cell.
non-living	a virus has no cytoplasm, ribosomes or enzymes, so it cannot carry out metabolic reactions, and only replicates inside a host cell.
virus	a particle with genetic material, a capsid and attachment proteins, using the host cell machinery to replicate.

I can...

- [ ] Viruses are acellular and non-living
- [ ] Virus particle structure: genetic material, capsid, attachment protein

EXAM TRAP

Never call a virus a cell or a living organism, and never give it a cell wall or cytoplasm. For non-living, give both ideas: acellular, and cannot carry out metabolism or reproduce outside a host cell.

4 marks: what earns them

1. Genetic material / nucleic acid (DNA or RNA) at the core
   Not: nucleus / chromosome in a nucleus
2. Surrounded by a protein coat / capsid
   Not: cell wall / membrane / capsule
3. Attachment proteins on the outside that bind to (complementary) receptors on the host cell
   Not: flagella / attachment proteins are inside the capsid
4. Non-living because it is acellular / has no cell structure (no cytoplasm or organelles) and cannot carry out metabolism or reproduce outside a host cell (both ideas are needed for the mark)
   Not: a virus is a very small cell / not alive because it is small

Remember

Inside out: genetic material, capsid, attachment protein.

Acellular, so non-living.

Replicates only inside a host cell.

Independent revision resource, not endorsed by AQA. Practice question is original.
© 2026 Medservatory, a project of ADMR Solutions Ltd. Free to print and share for personal study.