10. Infectious diseases

Starter Quiz · 课前小测

A-Level Biology Name: _____ Score: _____

1. A pathogen is:

   ☐ an organism that lives in or on a host and causes disease

   ☐ a type of white blood cell

   ☐ a medicine that kills bacteria

   ☐ a vaccine

2. Which helps control the spread of an infectious disease?

   ☐ vaccination

   ☐ eating more sugar

   ☐ ignoring symptoms

   ☐ sharing needles

3. Penicillin kills bacteria by:

   ☐ stopping them building their cell walls, so they take in water and burst

   ☐ breaking down their DNA

   ☐ blocking their ribosomes

   ☐ dissolving their membranes with heat

4. An organism that carries a pathogen from one host to another — like the mosquito for malaria — is a _____.

   _____

5. The most important way to prevent cholera is to:

   ☐ provide clean water and proper sewage treatment

   ☐ sleep under mosquito nets

   ☐ use condoms

   ☐ take a long antibiotic course

6. Why do antibiotics not work against viruses?

   ☐ a virus has no cell wall or reactions of its own to target

   ☐ viruses are too large

   ☐ viruses have thicker cell walls

   ☐ viruses are not alive at all, so nothing affects them

7. Cholera is caused by a bacterium and spreads through water or food contaminated with faeces.

   ☐ True ☐ False

8. Malaria is controlled by attacking the mosquito _____ — with nets, insecticides and by draining breeding pools.

   _____

9. There is currently no cure or vaccine for HIV, so prevention (condoms, clean needles) matters most.

   ☐ True ☐ False

10. Antibiotic resistance spreads by natural _____ — resistant bacteria survive and reproduce.

    _____

10. Infectious diseases

Answers · 答案

A-Level Biology

1. **an organism that lives in or on a host and causes disease**

   A pathogen causes an infectious (transmissible) disease — e.g. a bacterium, virus or protoctist.

2. **vaccination**

   Vaccination, hygiene and quarantine all reduce the spread of disease.

3. **stopping them building their cell walls, so they take in water and burst**

   Penicillin prevents cell-wall synthesis; the growing cell cannot hold the water it absorbs, so it bursts.

4. **vector**

   The mosquito is the vector that transmits the Plasmodium protoctist when it bites.

5. **provide clean water and proper sewage treatment**

   Cholera spreads via faeces-contaminated water, so clean water and good sanitation are key.

6. **a virus has no cell wall or reactions of its own to target**

   Antibiotics target bacterial structures/processes; a virus has none of these, using the host cell instead.

7. **True**

   Cholera (Vibrio cholerae) spreads via contaminated water/food — so clean water and sanitation prevent it.

8. **vector**

   The mosquito is the vector; stop it biting (nets) or breeding (drain still water) and you stop malaria spreading.

9. **True**

   HIV has no cure or vaccine yet; prevention and drugs that slow the virus are the main tools.

10. **selection**

    The antibiotic is the selection pressure; only resistant bacteria survive to pass on their genes.