

Full Higher Separate content. ★ = Higher Tier. ◆ = Separate Science only.

**Q1. For each type of pathogen, give ONE example of the disease it causes: (a) bacterium, (b) virus, (c) fungus, (d) protist.**

[4 marks]

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**Q2. Explain why antibiotics cannot treat viral diseases such as influenza.**

[3 marks]

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**Q3. Explain how HIV leads to AIDS.**

[3 marks]

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**Total: 10 marks**

**Q1 (4 marks)**

*For each type of pathogen, give ONE example of the disease it causes: (a) bacterium, (b) v...*

- (a) Bacterium: salmonella / TB / gonorrhoea [1]
- (b) Virus: HIV / measles / influenza [1]
- (c) Fungus: rose black spot / athlete's foot [1]
- (d) Protist: malaria (Plasmodium) [1]

**Q2 (3 marks)**

*Explain why antibiotics cannot treat viral diseases such as influenza.*

- Antibiotics target bacterial structures (cell walls, bacterial ribosomes) [1]
- Viruses lack these structures [1]
- Viruses replicate inside host cells — targeting viral replication would also kill host [1]

**Q3 (3 marks)**

*Explain how HIV leads to AIDS.*

- HIV infects and destroys CD4+ T helper lymphocytes [1]
- As T cell count falls, immune system progressively weakens [1]
- AIDS: immune system fails — opportunistic infections become life-threatening [1]