Foundation Combined — only core Foundation content included.

Q1. Explain how vaccination protects an individual from a specific disease.

[4 marks]

Q2. Explain what herd immunity is and why vaccination rates must remain above a threshold to maintain it.

[3 marks]

Total: 7 marks

E: Vaccination

Q1 (4 marks)

Explain how vaccination protects an individual from a specific disease.

• Vaccine contains harmless/dead/weakened pathogen or its antigens [1]

• Immune system responds — lymphocytes produce specific antibodies [1]

• Memory cells are produced and remain in the body [1]

• If real pathogen enters: memory cells produce antibodies very rapidly — infection destroyed before symptoms develop [1]

Q2 (3 marks)

Explain what herd immunity is and why vaccination rates must remain above a threshold to m…

• Herd immunity: when enough people in a population are immune that the pathogen cannot spread easily [1]

• Unvaccinated individuals are indirectly protected — unlikely to encounter pathogen [1]

• If vaccination rates fall below threshold, chain of immunity breaks and outbreaks become likely [1]