

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

Q1. Describe the structure of DNA.

[3 marks]

★ HIGHER TIER

Q2. ★ Describe protein synthesis. Name the process at each stage and where it occurs.

[4 marks]

Total: 7 marks

Q1 (3 marks)

Describe the structure of DNA.

- Double helix — two strands twisted together [1]
- Nucleotides: deoxyribose sugar + phosphate + base (A, T, C, G) [1]
- Complementary base pairing: A-T and C-G [1]

Q2 (4 marks) [★ HT]

★ Describe protein synthesis. Name the process at each stage and where it occurs.

- Transcription (nucleus): template DNA strand → mRNA (U replaces T) [1]
- mRNA leaves nucleus through pores [1]
- Translation (ribosomes): codons read, tRNA brings amino acids [1]
- Peptide bonds form → polypeptide chain (protein) assembled [1]