

Evidence for evolution and classification: practice questions

7 questions · 16 marks · mark scheme at the back

For Edexcel GCSE Biology 1BI0 and Combined Science 1SC0. **Triple only** is not in Combined Science. **Higher tier** is only on the Higher paper.

Name

Total / 16

1 Which fossil is dated at about 3.2 million years old? [1 mark]

- A. ☐ Ardi
- B. ☐ Lucy
- C. ☐ The fossils found by Richard Leakey
- D. ☐ None of these

2 Ardi is 4.4 million years old and the fossils found by Richard Leakey are 1.6 million years old. Calculate the difference in age. Give your answer in standard form. [2 marks]

Answer =

3 Fossils provide evidence for human evolution. Explain why scientists sometimes disagree about what fossils show. [3 marks]

4 Describe how stone tools provide evidence for human evolution. [2 marks]

5 A stone tool is found in a layer of rock. Explain how scientists can find out its age from its environment. **[2 marks]**

6 **Triple only** **[3 marks]**
The arm of a human, the wing of a bat and the flipper of a whale all have the same basic arrangement of bones, but are used for different jobs. Explain what this suggests about the evolution of these animals.

7 Describe how genetic analysis has led to the suggestion of three domains rather than five kingdoms. **[3 marks]**

Mark scheme

One mark for each point unless a maximum is given. Words in brackets are not needed for the mark.

1. [1]

B B (1)

2. [2]

- $4.4 - 1.6 = 2.8$ million years (1)
- 2.8×10^6 years (1)
- allow 1 mark for 2 800 000 or 2.8 million

3. [3]

- few fossils are found / most organisms decay before they can become fossils (1)
- fossils are often incomplete / only fragments are found (1)
- so there are gaps in the evidence / it is hard to know how they are related (1)
- new discoveries can change ideas (1)
- Max 3

4. [2]

- older tools are simple, newer tools are more complex / better made (1)
- suggests early humans developed greater skill / intelligence over time (1)

5. [2]

- the age of the rock layer / materials in the layer (for example volcanic ash) can be found (1)
- the tool is the same age as the layer it was found in (1)
- allow deeper layers are older, so the depth of the layer gives its relative age (1)
- Max 2

6. [3] Triple only

- same basic bone structure / pentadactyl limb (1)
- suggests they have a common ancestor (1)
- limbs have become adapted for different functions by natural selection (1)

7. [3]

- five kingdoms was based on structure / observed features (1)
- genetic analysis showed the prokaryotes are not one closely related group (1)
- Archaea and Bacteria are genetically very different, so three domains: Archaea, Bacteria and Eukarya (1) allow Eukaryota / eukaryotes