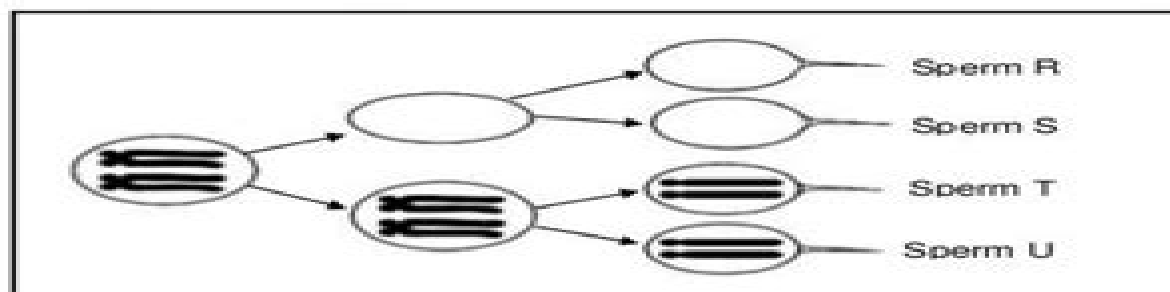


- 2.2.3 (a) For what period of time did *A. africanus* exist on Earth? Show all working. (3)
- (b) Name ONE piece of evidence that could be used to prove that *A. africanus* existed during the time period calculated in QUESTION 2.2.3(a). (1)
- 2.2.4 (a) Which organism, *H. ergaster* or *H. neanderthalensis*, is more closely related to modern-day humans? (1)
- (b) Explain your answer to QUESTION 2.2.4(a) using information in the diagram. (2)
- (9)

2.3 The diagram below shows the result of abnormal meiosis, starting with a cell showing chromosome pair 21.



- 2.3.1 Explain the number of chromosomes present in sperm **R** and sperm **T**. (3)
- 2.3.2 How many copies of chromosome 21 would you expect in a normal gamete? (1)
- 2.3.3 What genetic disorder will result if sperm **U** fertilises a normal ovum? (1)
- 2.3.4 Describe TWO ways in which meiosis contributes to genetic variation. (7)
- (12)

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