INSTRUCTIONS AND INFORMATION

Read the following instructions carefully before answering the questions.

1. Answer ALL the questions.
2. Write ALL the answers in the ANSWER BOOK.
3. Start the answers to EACH question at the top of a NEW page.
4. Number the answers correctly according to the numbering system used in this question paper.
5. Present your answers according to the instructions of each question.
6. Do ALL drawings in pencil and label them in blue or black ink.
7. Draw diagrams, tables or flow charts only when asked to do so.
8. The diagrams in this question paper are NOT necessarily drawn to scale.
9. Do NOT use graph paper.
10. You must use a non-programmable calculator, protractor and a compass, where necessary.
11. Write neatly and legibly.

SECTION A

QUESTION 1

1.1 Various options are provided as possible answers to the following questions. Choose the correct answer and write only the letter (A to D) next to the question number (1.1.1 to 1.1.10) in the ANSWER BOOK, e.g. 1.1.11 D.

1.1.1 Which ONE of the following may result in Down syndrome in humans?

A A gene mutation on chromosome 21
B Failure of chromosome pair 21 to separate during anaphase I
C Failure of the gonosomes to separate during meiosis II
D A gene mutation occurs on the X chromosome

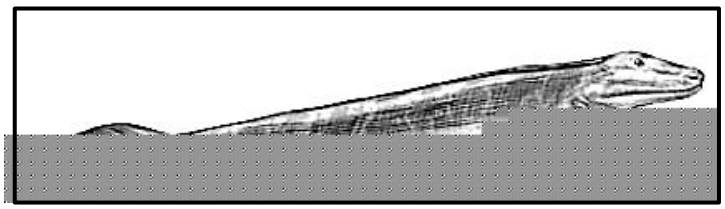
1.1.2 Variation within a species is introduced through é

A random mating and asexual reproduction.
B mitosis and random fertilisation.
C random mating and random fertilisation.
D mitosis and meiosis.

1.1.3 African apes and humans are similar. Both have é

A small jaws and well-developed brow ridges.
B opposable thumbs and bare fingertips.
C gaps between their teeth and eyes in front.
D an upright posture and a cranial ridge.

1.1.4 The diagram below shows *Tiktaalik roseae,* a fish that may be the ancestor of the first organisms to live on land.



According to Lamarck, this species of fish may have evolved the ability to 'walk' o n l a n d b y é

A undergoing natural genetic mutations which caused the fins to develop into legs.
B the process of natural selection.
C passing on the acquired characteristic of fins to their offspring.
D stretching its fins and using them for 'walking'.