

**AQA, OCR, Edexcel**

# GCSE Science

## GCSE Biology

### Chromosome Answers

Name:

**M M E**

Mathsmadeeasy.co.uk

Total Marks: /24

Q1: State the definition of a chromosome.

A= Thread like structure that carries a cells DNA.

(1 mark)

Q2: Chromosomes are present in pairs. How many pairs of chromosomes are present in the human genome?

A= 23 Pairs

(1 mark)

Q3: List the 4 nucleotides, which make up DNA.

A= 1 mark per correct nucleotide.

1. G
2. T
3. A
4. C

(4 marks)

Q4: Describe the structure of DNA.

A= Award mark for 2 of the following.

- Double stranded DNA
- Coiled
- Complementary base pairs joined by weak hydrogen bonds

(3 marks)

Visit <http://www.mathsmadeeasy.co.uk/> for more fantastic resources.

Q5: Below is a nucleotide sequence of DNA. Tick the correct complementary sequence from the list below.

**GAACTTG**

TCCAGGT

CTTGAAC

ACCGGTC

GAACTTG

(1 mark)

Q6: What is a gene?

A= Small section of DNA

(1 mark)

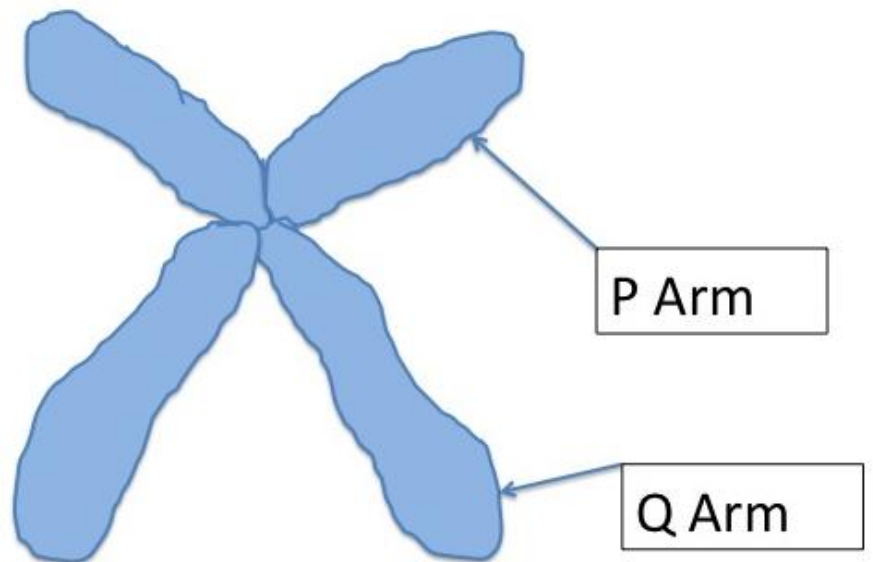
Q7: What is an allele?

A= 2 versions of each gene present in the pair of chromosomes

(1 mark)

Q8: Label the P and Q arm of the chromosome shown in figure 1.

Figure 1



A= 1 mark for each correct label.

(2marks)

Q9: Explain how DNA can be extracted from soya beans.

A= 1 mark for each of the following points (max 6).

- Mix salt water and detergent
- Mash up soya beans
- Mix the soya beans with saltwater and detergent
- Leave 15mins at 60°C
- Filter sample
- Pour iced ethanol on the filtrate
- DNA floats to the surface

(6 marks)

Visit <http://www.mathsmadeeasy.co.uk/> for more fantastic resources.

Q10: Describe the stages of protein synthesis.

A= 1 mark for for each point (max 6)

- RNA polymerase binds to non-coding DNA
- RNA polymerase produces complementary messenger RNA(mRNA)
- mRNA attaches to Ribosomes
- mRNA reads in codons/ 3 base pairs
- Transfer amino acids to transfer RNA (tRNA)
- Linking Amino Acids form Polypeptides

(6 marks)