

Revision Sheet

IGCSE Biology · Unit 17 Inheritance

10 vocabulary items · 29 marks of exam questions (6 questions)

Part 1 · Vocabulary review (10 items). The terms this unit is examined on most. Mark it yourself from the answer key.

Section A · Chinese to English

Write the English word.

- | | | |
|-----|-------|-----|
| 1. | <hr/> | [1] |
| 2. | <hr/> | [1] |
| 3. | <hr/> | [1] |
| 4. | <hr/> | [1] |
| 5. | <hr/> | [1] |
| 6. | <hr/> | [1] |
| 7. | <hr/> | [1] |
| 8. | <hr/> | [1] |
| 9. | <hr/> | [1] |
| 10. | <hr/> | [1] |

Part 2 · Exam questions (29 marks, 6 questions) begins on the next page. They are ordered easy to difficult and none of them has been set before.

11 Which base in a DNA molecule always pairs with a G base?

☐**A** A**B** G**C** C**D** T

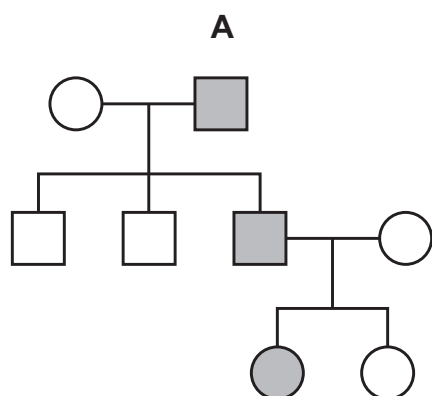
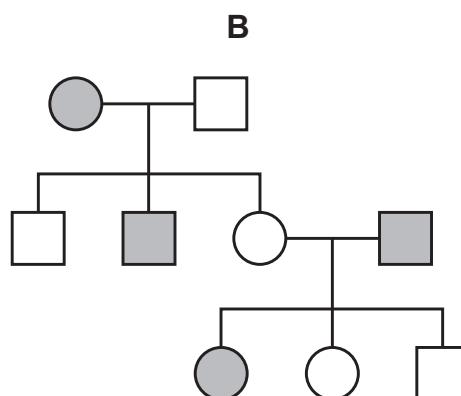
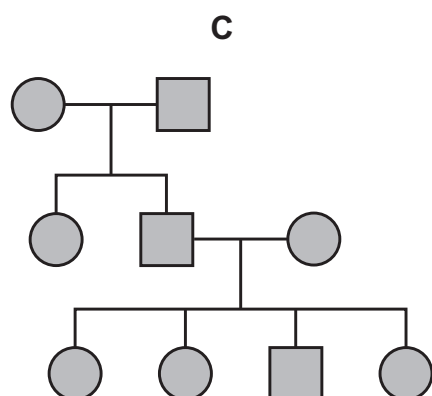
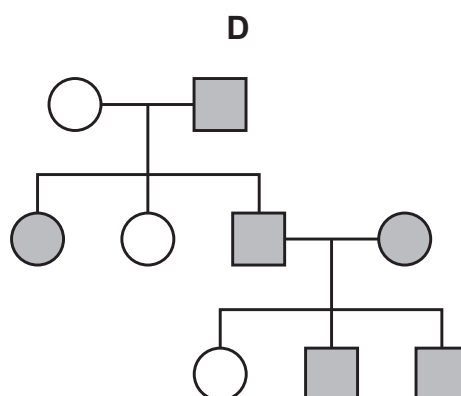
12 Which word is used to describe stem cells?

☐**A** gametes**B** haploid**C** homozygous**D** unspecialised

13 The pedigree diagrams show the pattern of inheritance of a genetic disorder in four families.

☐This genetic disorder is **not** sex-linked.

Which pedigree diagram proves that the genetic disorder **must** be caused by a dominant allele?



key



unaffected male

affected male



unaffected female

affected female

14 What are correct statements about meiosis?

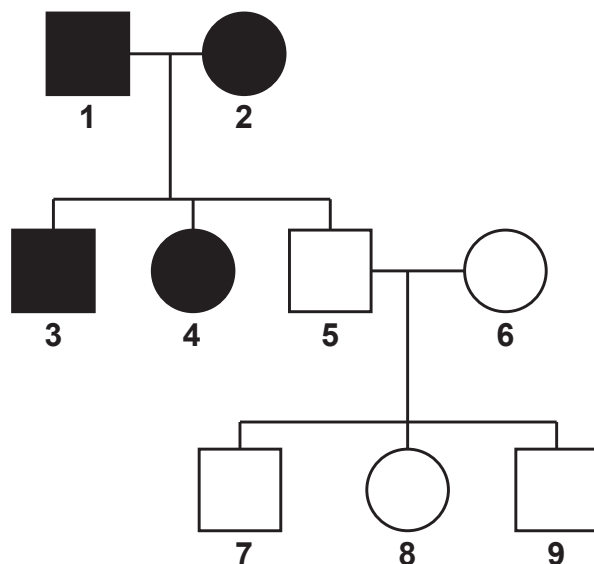
	produces genetically identical cells	involved in repair of damaged tissues
A	yes	yes
B	yes	no
C	no	yes
D	no	no

15 Huntington's disease is a genetic disease caused by a mutation in a single gene.

The allele for Huntington's disease is dominant and is represented by the letter **H**.

The allele for **no** Huntington's disease is recessive and is represented by the letter **h**.

Fig. 3.1 is a pedigree diagram showing the inheritance of Huntington's disease in one family.



Key:

○ female without Huntington's disease

● female with Huntington's disease

□ male without Huntington's disease

■ male with Huntington's disease

Fig. 3.1

(a) (i) State the number of males with Huntington's disease in Fig. 3.1.

..... [1]

(ii) State the **two** possible genotypes for person **3** in Fig. 3.1.

..... and

[2]

(iii) State the evidence from Fig. 3.1 that suggests that the allele for Huntington's disease is dominant.

.....
.....
..... [1]

- (b)** A person that is heterozygous for Huntington's disease has a child with a person that is homozygous recessive.

Complete the Punnett square in Fig. 3.2 by writing in the gametes and offspring for this cross and calculate the percentage chance of the child inheriting Huntington's disease.

		
.....		
.....		

Percentage chance of the child inheriting Huntington's disease

[3]

Fig. 3.2

- (c)** Chromosomes contain genetic information in the form of genes.

- (i)** Define the term gene.

.....
 [2]

- (ii)** State where chromosomes are found in cells.

..... [1]

- (iii)** State the chromosomes involved in the inheritance of sex in humans.

..... [1]

[Total: 11]

16 (a) Fig. 5.1 shows the stages involved in protein synthesis.

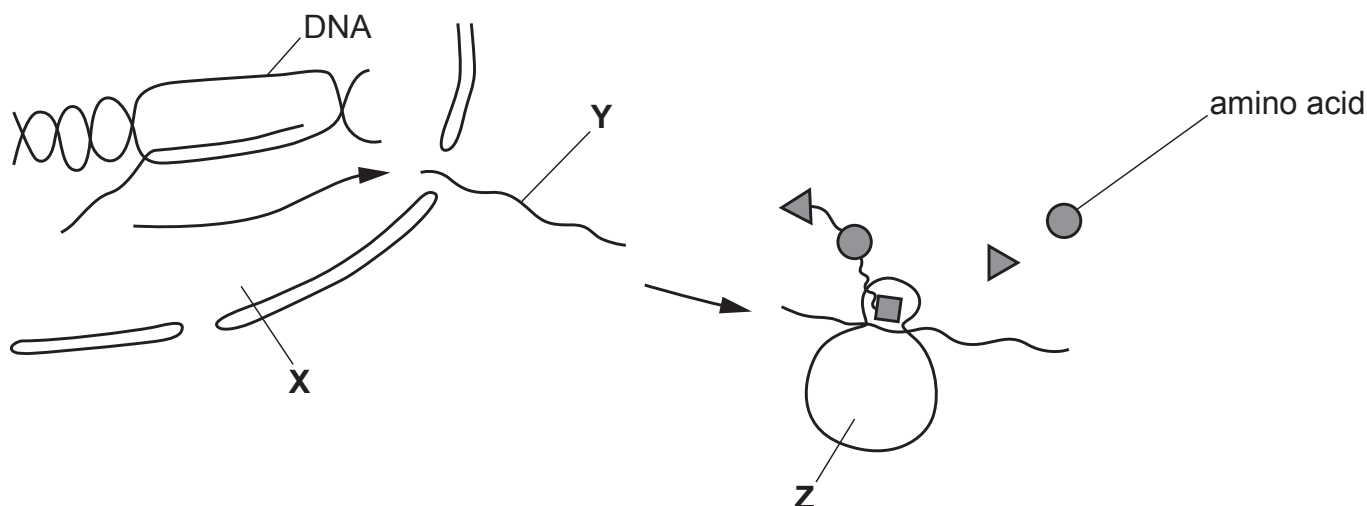


Fig. 5.1

(i) State the names of the parts labelled **X**, **Y** and **Z** in Fig. 5.1.

X

Y

Z [3]

(ii) State what determines the sequence of the amino acids in the protein that is produced.

.....

.....

..... [1]

(iii) Explain why the sequence of amino acids is important in the production of receptor molecules for neurotransmitters.

.....

.....

.....

.....

..... [2]

(b) Explain why body cells can have different specialised functions even though they contain the same genes.

[2]

(c) Allele frequency in a population can be changed by natural selection and artificial selection.
State the meaning of the term allele.

[1]

(d) Describe how artificial selection differs from natural selection.

[3]

(e) Mutation causes formation of new alleles which increases genetic variation.
State **two other** sources of genetic variation in populations.

1

2

[2]

[Total: 14]