

10.1 Meiosis

Question Paper

Course	DP IB Biology
Section	10. Genetics & Evolution (HL Only)
Topic	10.1 Meiosis
Difficulty	Easy

Time allowed: 10
Score: /5
Percentage: /100

Question 1

Which of the following statements helps to explain why DNA replication happens before meiosis?

- I. A gamete-producing cell ends up producing 4 gametes.
- II. The cell undergoes reduction division during meiosis.
- III. Gametes contain double the amount of genetic material than somatic cells.
- IV. Each parent's genome is replicated to allow two copies of their alleles to be inherited with equal probability.

- A. I, II, and IV only.
- B. II and III only.
- C. I and IV only.
- D. I, II, III, and IV.

[1 mark]

Question 2

Which row of the table is correct?

	Number of chromosomes in a somatic cell	Amount of genetic material in a somatic cell	Amount of genetic material in a gamete-producing cell before prophase I
A.	$2n$	x	$2x$
B.	$2n$	$2x$	$2x$
C.	$2n$	$4x$	$4x$
D.	n	x	$2x$

[1 mark]

Question 3

Which row of the table represents the correct chronological order of cells via which a man's DNA is passed onto his offspring?

A.	zygote → spermatozoon → spermatid → spermatocyte
B.	spermatozoon → spermatid → zygote → spermatocyte
C.	spermatid → spermatocyte → spermatozoon → zygote
D.	spermatocyte → spermatid → spermatozoon → zygote

[1 mark]

Question 4

Which of the following statements apply to the process of crossing over in meiosis?

- I. Crossing over occurs between non-homologous sister chromatids.
- II. Crossing over occurs between non-sister homologous chromatids.
- III. Crossing over involves genetic recombination.
- IV. Unequal-length sections of DNA routinely cross from one strand to another during crossing-over.

- A. I, III, and IV only.
- B. II and III only.
- C. II and IV only.
- D. II, III, and IV only.

[1 mark]

Question 5

Which row of **A – D** shows the correct names of the phases of meiosis I pictured below?

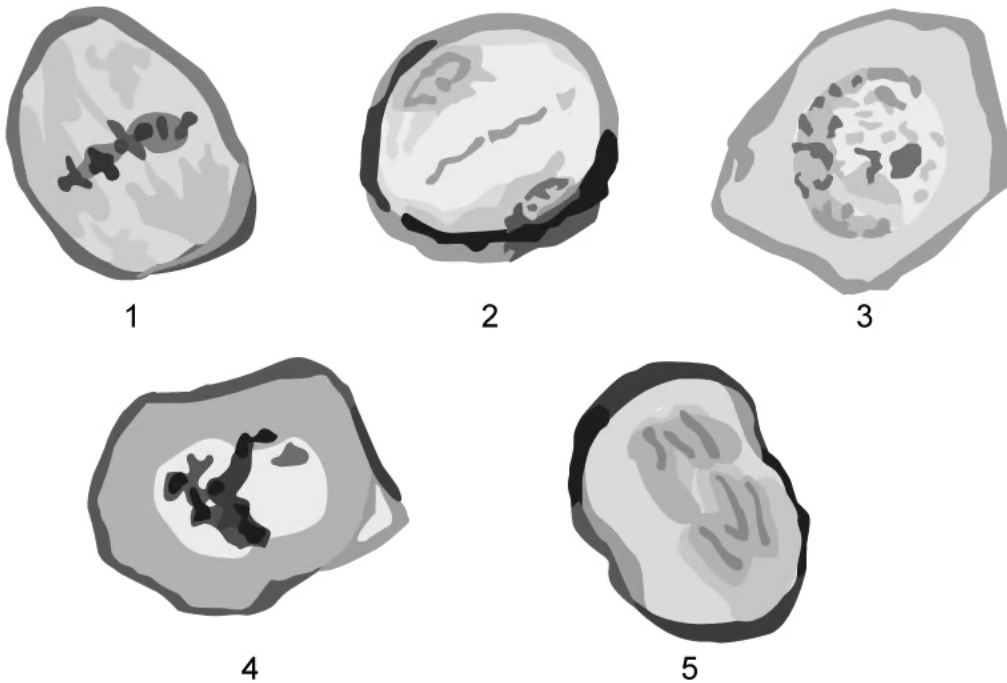


	Image 1	Image 2	Image 3	Image 4	Image 5
A.	anaphase	telophase	prophase	metaphase	interphase
B.	metaphase	interphase	telophase	prophase	anaphase
C.	metaphase	telophase	interphase	prophase	anaphase
D.	anaphase	interphase	prophase	telophase	metaphase

[1 mark]