



**LIFE SCIENCES GRADE 12**

**PRACTICAL TASK 1.1: MEIOSIS**

**DATE: 16 FEBRUARY 2017**

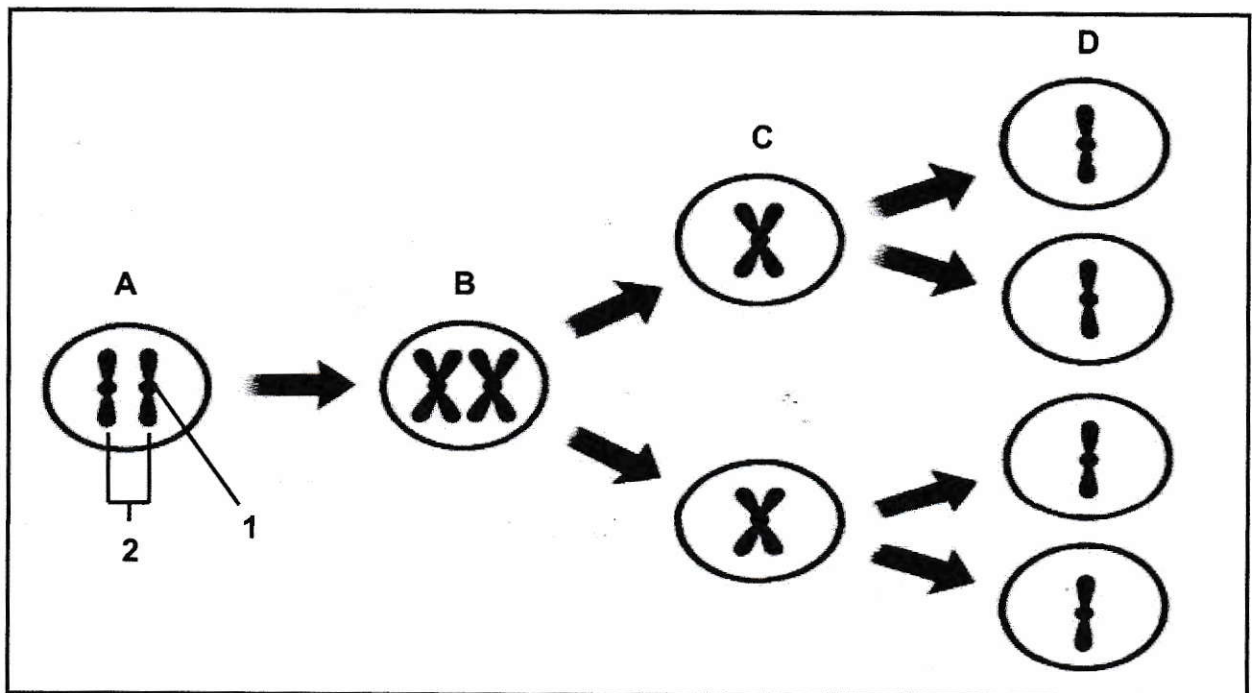
**NAME:** \_\_\_\_\_

**TIME: 45 MIN**

<b>Total</b>	
	<b>30</b>

**QUESTION 1**

1.1 A grade 12 class studied micrographs of the process of meiosis. The diagrams below represent some of the drawings made by one of the learners.



1.1.1 Provide a label for structure 1.

\_\_\_\_\_ (1)

1.1.2 Cell A contains TWO structures numbered 2. What are these structures called?

\_\_\_\_\_ (1)

1.1.3 Answer the following questions about the products of meiosis as seen in the diagrams.

(a) How many cells will result at the end of meiosis II from the one in Diagram A?

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(b) What type of cells would be formed from the cells mentioned in QUESTION 1.1.3 (a)

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(2)

1.1.4 Where does meiosis take place in the female human body?

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(1)

1.1.5 Explain the importance of meiosis in terms of chromosome number in the human life cycle.

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(2)

1.1.6 If the cells in the diagrams would have belong to a human being, how many chromosomes do you suspect to find in each cell at Diagram D?

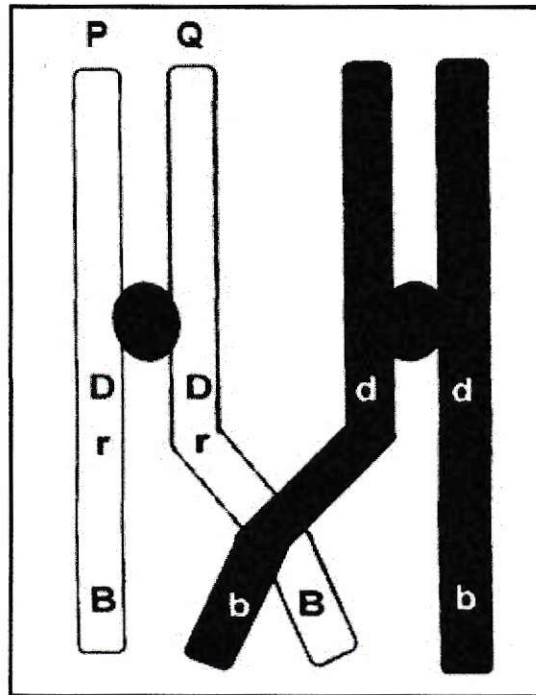
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(1)

(8)

**QUESTION 2**

2.1 The diagram below represents some structures during a phase of meiosis.



2.1.1 Give the name of the process represented in the diagram.

\_\_\_\_\_ (1)

2.1.2 State the phase of meiosis during which the process mentioned in QUESTION 2.1.1 takes place.

\_\_\_\_\_ (1)

2.1.3 Explain the importance of the process mentioned in QUESTION 2.1.1.

\_\_\_\_\_  
\_\_\_\_\_ (2)

2.1.4 Draw a diagram, giving the position of the alleles (letters representing the variations of a gene) to show the structure of chromatid **Q** after the process mentioned in QUESTION 2.1.1 has taken place.

(2)

2.1.5 Briefly describe the process mentioned in QUESTION 2.1.1

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(2)

**(8)**

**QUESTION 3**

3.1 An investigation was done by grade 12 learners to determine the number of Down syndrome babies that women of different ages had given birth to.

The results of the investigation are shown in the table below.

<b>Age of mother</b>	<b>Percentage (%) of babies born with Down syndrome</b>
35	0,3
37	0,5
39	0,7
41	0,9
43	1,6
45	2,3
47	3,9

3.1.1 State the independent variable in this investigation.

\_\_\_\_\_ (1)

3.1.2 Write a suitable conclusion for the investigation based on the results in the table.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ (2)

3.1.3 Explain how an ovum may contain TWO copies of chromosome 21 before fertilisation.

\_\_\_\_\_  
\_\_\_\_\_ (2)

3.1.4 Use the data in the table above to draw a line graph

(6)

3.1.5 If the investigation was done with 200 mothers, how many babies from mothers age 37 had Down syndrome? Show all your calculations.

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(2)

3.1.6 State ONE advantage of repeating the investigation.

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(1)

(14)

**TOTAL [30]**