



CHAPTER 3: HEREDITY AND VARIATION

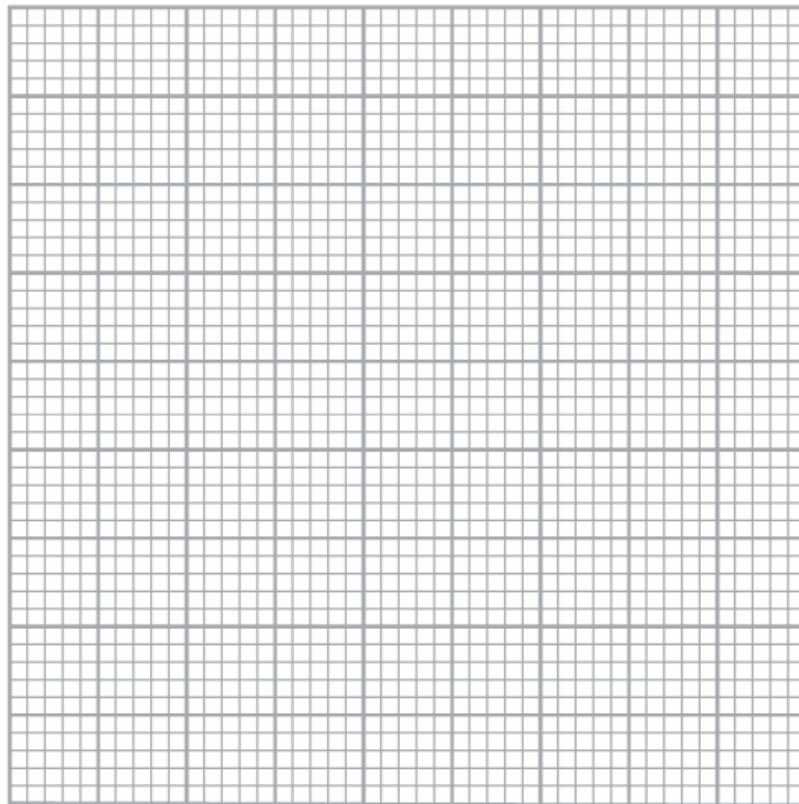


Paper 2: Section A (Structured Questions)

- 1 The weights of the students in a class are measured to the nearest kilogram. The values are given in the table below.

Weights (kilogram)	58	59	60	61	62
Number of students	5	7	9	6	3

- (a) On the graph paper, draw a bar graph of the number of students against weight.



[3 marks]

- (b) How many students are there in the class?

[1 mark]

(c) What is the average weight of the students? (Show your working)

[2 marks]

(d) How many per cent of the students weigh more than 60 kg? (Show your working)


[2 marks]

(e) Based on your graph, state the kind of variation shown.

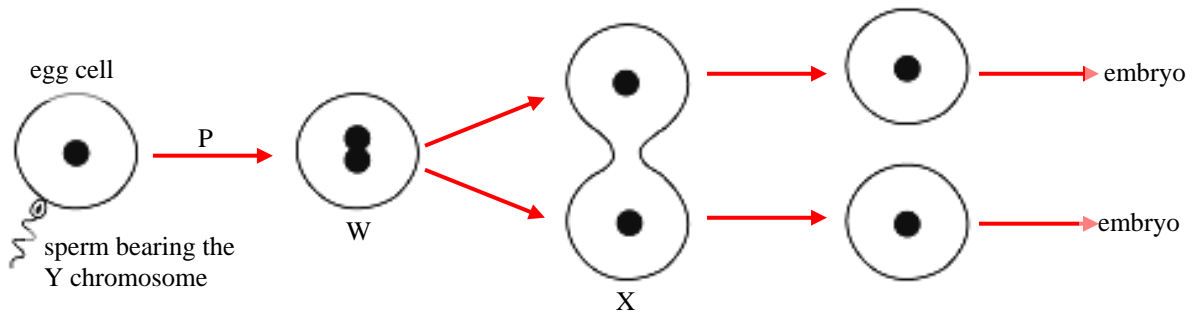
[1 mark]

(f) Give another example of a similar variation among the students.

[1 mark]

 **Paper 2: Section B (Structured Questions)**

2 The diagram below illustrates how a pair of twins may occur.



(a) Name the process P which must take place before W is formed.

_____ [1 mark]

(b) What is W?

_____ [1 mark]

(c) What is taking place at stage X?

_____ [1 mark]

(d) What is an embryo?

_____ [1 mark]

(e) What process enables an embryo to grow and develop into a baby?

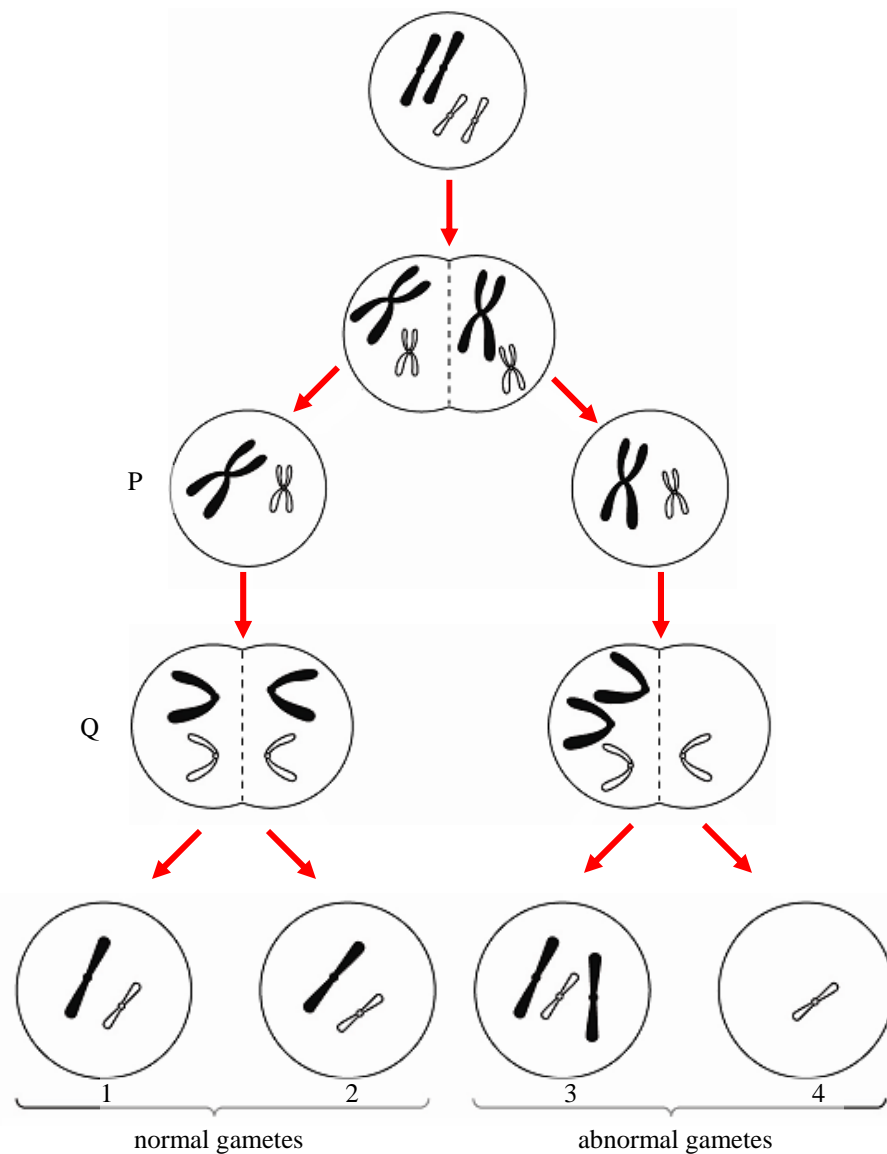
_____ [1 mark]

- (f) Will the twins be...
i. boys or girls? Give a reason.

- ii. identical or non-identical? Give a reason.

[2 marks]

- 3 The diagram below shows a cell division taking place in the process of meiosis.



(a) What is the objective of meiosis?

_____ [1 mark]

(b) What is happening in the cell in stage P?

_____ [1 mark]

(c) What is happening to the chromosomes in stage Q?

_____ [1 mark]

(d) i. Compare the number of chromosomes in gamete 1 with that in the parent cell.

ii. Why is this difference essential for the process of fertilization?

_____ [2 marks]

(e) If gamete 3 is successfully fertilized, it will develop into a deformed child. What defect will the child have?

_____ [1 mark]

(f) State **two** physical characteristics of a child with this defect.

1. _____

2. _____

[2 marks]