

**AS Level Biology A**  
**H020/01 Breadth in Biology**

**Question Set 18**



- (c) A student observed a prepared slide of an onion root tip under a microscope. The total number of cells in the field of view was 265.

The number of cells at the different stages of the cell cycle are shown in Table 23.

Stage of cell cycle	Number of cells
interphase	207
prophase	42
metaphase	4
anaphase	6
telophase	6

**Table 23**

The cell cycle takes 20 hours. The number of cells visible at each stage is proportional to how long each stage of the cell cycle lasts.

Calculate the time taken for prophase to occur.

Give your answer in minutes to the nearest whole number.

$$20 \text{ hours} \times 60 = 1200 \text{ mins}$$

$$\frac{1200}{265} \times 42 = 190 \text{ mins}$$

$$\text{time taken} = \dots\dots\dots 190 \dots\dots\dots \text{min} \quad [2]$$

**Total Marks for Question Set 18: 8**

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