Oxford Cambridge and RSA

GCSE Biology B (Twenty First Century Science)

J257/03 Breadth in Biology (Higher)

Question Set 9

1 Reflexes help us to respond to stimuli. In a simple reflex, nerve impulses are passed along a pathway called a reflex arc.

The diagram in **Fig. 1.1** shows a reflex arc.

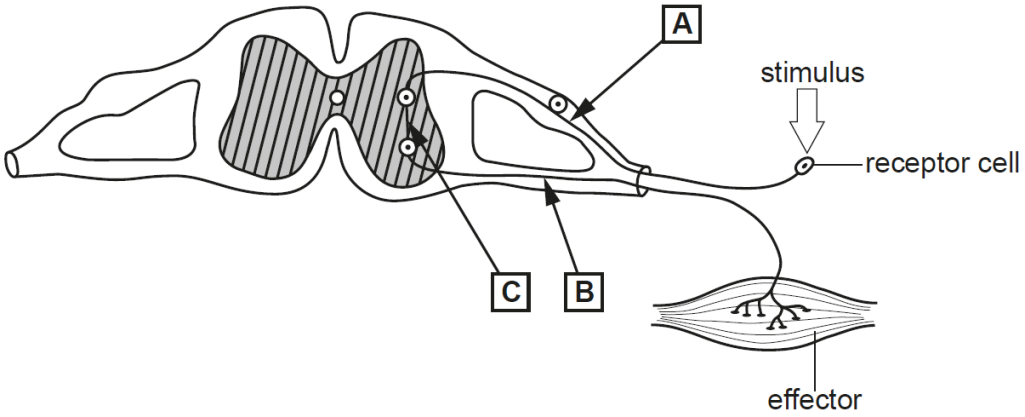

Fig. 1.1

(a) Name the structures labelled **A**, **B** and **C**.

	Name of structure
A	
B	
C	

[3]

(b) Write down **one** advantage of a reflex arc **not** involving the brain.

[1]

(c) Two students want to investigate reflex actions.

They set up an experiment as shown in **Fig. 1.2**.

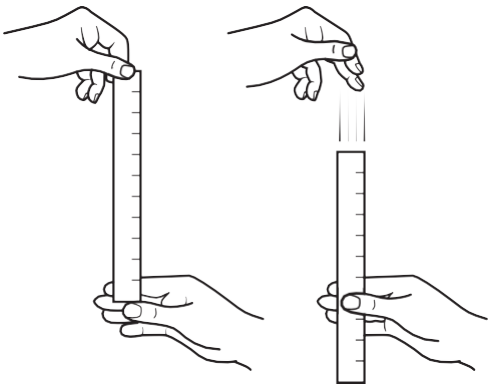

Fig.1.2

Each student decides to use a different method.

- Using a stop clock, student **A** measures the time it takes for the participant to catch the ruler.
- Student **B** measures the distance the ruler falls through the participant's hand

(i) Write down **one** reason why student **B's** method is better than student **A's**.

[1]

(ii) Write down **two** variables that both students would need to keep the same.

[2]

(iii) Both students decide to repeat their experiment.

Explain why.

[1]

(d) **(i)** Some nerve impulses can travel at a speed of 119 m / s.

Which of the following shows 119 written in standard form?

Tick (✓) **one** box.

1.19×10^{2} ☐

1.19×10^{-2} ☐

11.9×10^{1} ☐

119×10 ☐

[1]

(ii) Which part of a neuron speeds up transmission of a nerve impulse?

Tick (✓) **one** box.

Axon	☐
Fatty sheath	☐
Neurotransmitter	☐
Synapse	☐

[1]

Total Marks for Question Set 9 : 10