

SECTION B

Answer **all** the questions.

- 16 (a) Many insects such as moths and bumblebees are insulated with scales and hair, and are known as facultative endotherms.

Their metabolism during flight can cause the temperature of the flight muscles to increase 20–30 °C above the external temperature.

- (i) Using the information provided, explain why many moths and bumblebees are described as endothermic.

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- (ii) It is more difficult for moths and bumblebees to maintain their body temperature than for mammals and birds to maintain their body temperature.

Explain why.

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(d) A student planned to carry out a dissection of insect and fish gaseous exchange systems.

The student planned to complete diagrams of the different tissues. They were advised to observe the following guidelines:

- use a sharp pencil
- use ruled label lines
- include a scale bar.

Suggest **two** further guidelines for the student to follow to ensure they present their diagrams clearly and accurately.

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