Name: …….. Set: ……..

WJEC AS Biology
Adaptations for Parasitism

Specification Points:	
Parasites are organisms that live on or in another organism, called the host, and obtain nourishment at the expense of the host.	
The pork tapeworm, *Taenia solium*, lives inside the gut and needs to survive in a hostile environment.	
A simplified description of the life cycle to appreciate how the tapeworm has adapted by having a means of penetrating the host, attaching to the host, having a thick cuticle, producing large numbers of eggs and has resistant stages to overcome the period away from the host. (A detailed knowledge of the life cycle is not required).	

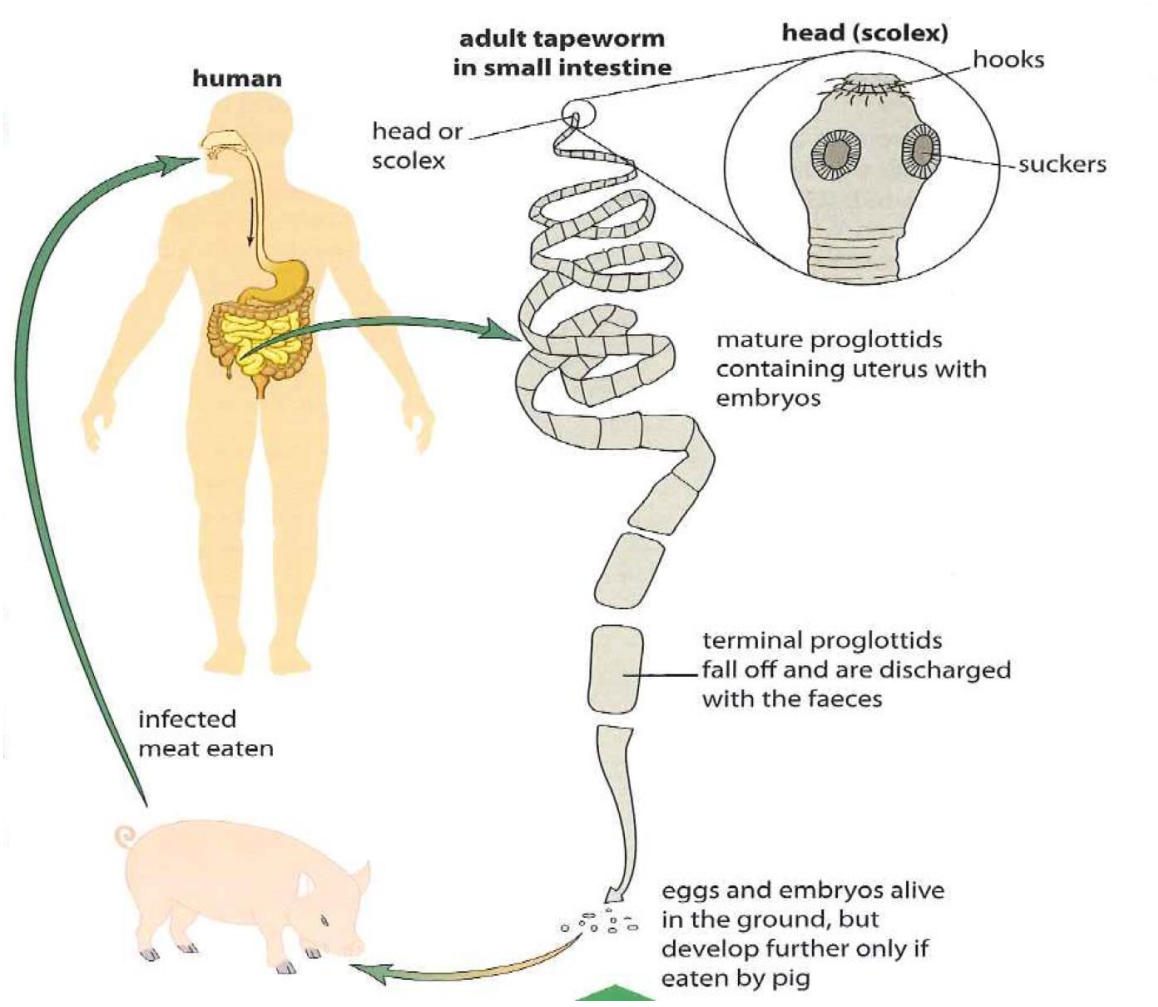
What is a parasite?

The Pork Tapeworm

Use the diagram of the life cycle of the pork tape worm and the photos to explain how it is adapted to survive.

You will need to include:

- Problems with living in the gut of another organism (e.g. digestive juices)
- How its life cycle helps it to be transmitted from host to host
- Structural adaptations of the pork tapeworm that allow it to survive and infect people.
- Any harmful effects of the tapeworm on humans



Answer the following examination questions on parasites:

1. *(a)* Define the term *parasite*. [2]

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(b) Name **two** characteristics of tapeworms which are adaptations to their parasitic life. [2]

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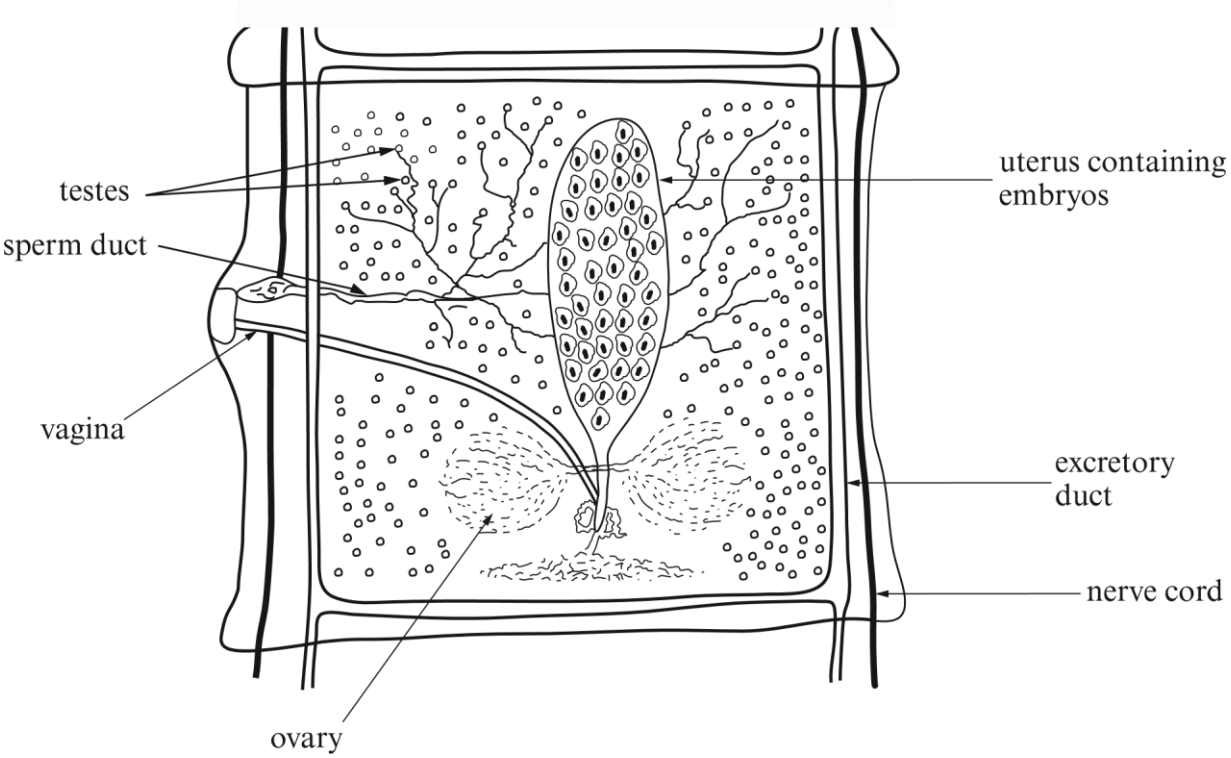
The diagram below shows one segment of a tapeworm found in the human gut. All segments in the body are identical.



(c) (i) One organ system found in almost all animals is absent from the tapeworm. By reference to the diagram, name this system. [1]

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(ii) How does the animal survive without this system? [2]

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(d) (i) Name **two** features of the worm's reproductive system, shown in the diagram, which are adaptations to its parasitic existence. [2]

1. .....

2. .....

(ii) Explain the importance of each of these features in the worm. [2]

1. .....

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2. .....

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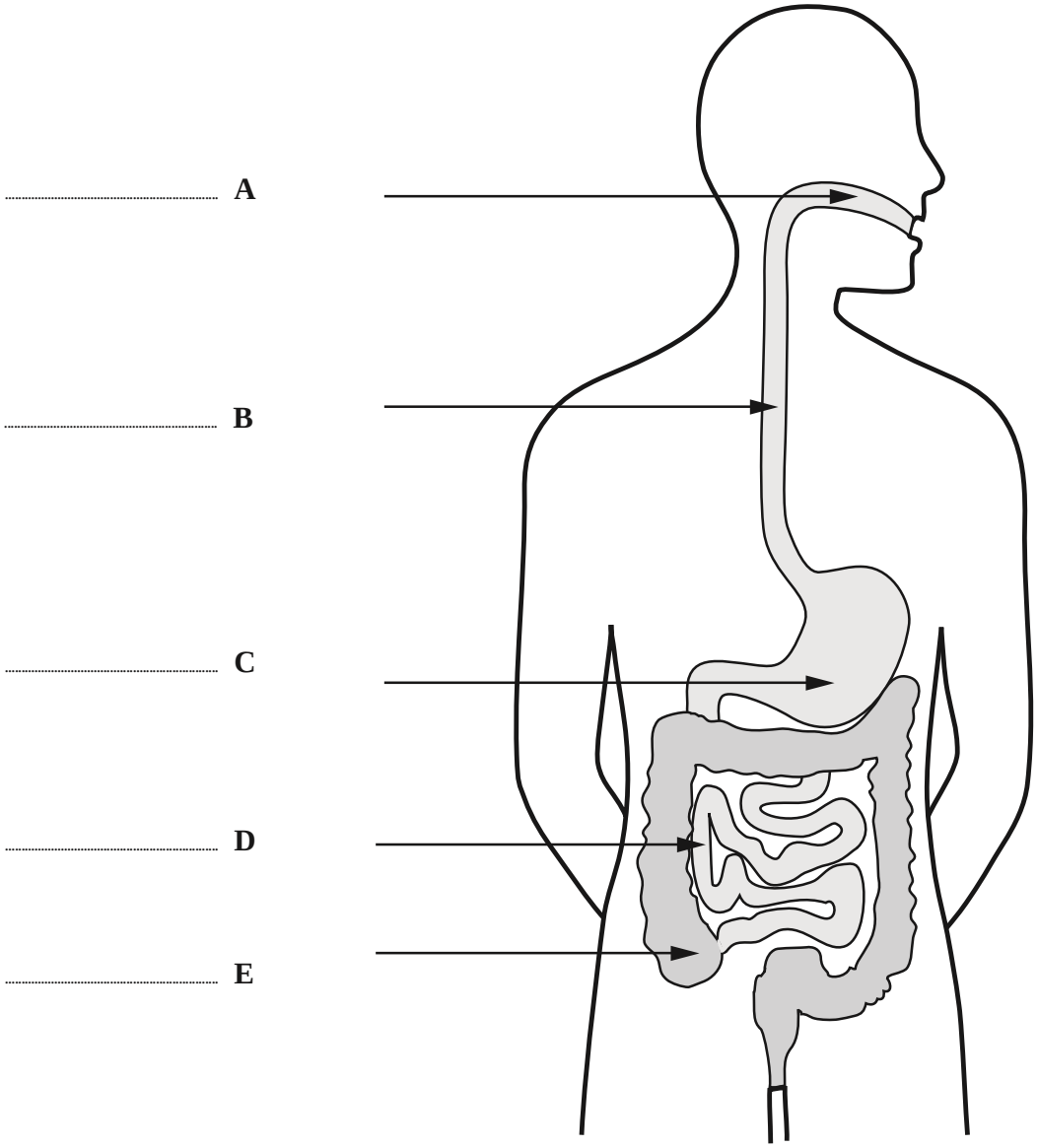
(Total 11 marks)

2. The diagram below shows a simplified diagram of the human digestive system.



a. Label parts **A** to **E** on the diagram. [1]

b. Using letters from the diagram identify the **main** regions in the human gut where the following processes take place.

i. Digestion .....

ii. Absorption ..... [2]

iii. *(c)* Explain why the human digestive system is divided into several regions. [1]

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(d) The adult pork tapeworm, *Taenia solium*, is a parasite of the region labelled **D** on the diagram opposite.

(i) What is meant by the term *parasite*? [2]

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(ii) Suggest why it is of benefit to the tapeworm to live in this region of the digestive system. [1]

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(e) Describe how tapeworms such as *Taenia solium* are adapted to overcome the following problems associated with living in the human digestive system. [2]

Peristalsis.

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Digestive enzymes

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(f) Suggest why tapeworms produce large numbers of eggs. [1]

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(Total 10 marks)