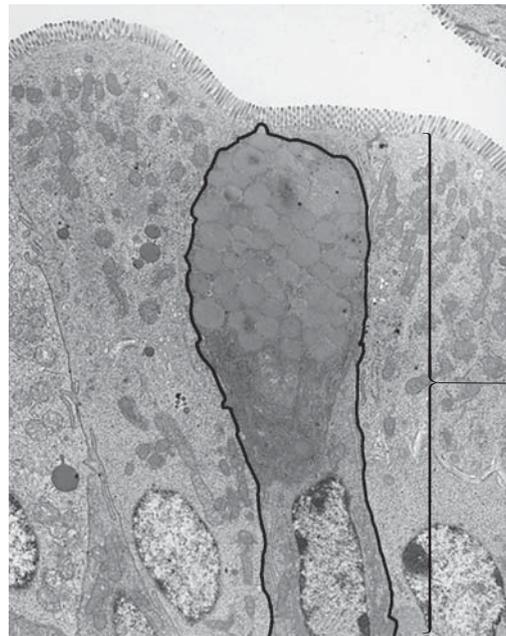


Answer ALL questions.

Some questions must be answered with a cross in a box ☒. If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☒.

- 1 The photograph below shows some human epithelial tissue, as seen using an electron microscope. The tissue includes a goblet cell which contains a large number of Golgi apparatus.



magnification  $\times 5000$

- (a) Explain the meaning of the term **tissue**.

(2)

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1  
.....  
2  
.....  
3  
.....



(b) The Golgi apparatus of a goblet cell is involved in receiving protein, modifying it and then packaging the modified protein into vesicles.

(i) In the space below, draw a diagram of a Golgi apparatus. Add an arrow to your drawing to show the direction of movement of the protein material as it moves through the Golgi apparatus.

(3)

(ii) Proteins in a cell can be made radioactive by supplying the cell with radioactive amino acids. The movement of the radioactive protein within the cell can be traced over time.

In an investigation, it was found that the quantity of radioactivity in the protein that entered the Golgi apparatus was less than that supplied to the cell.

Suggest **three** reasons for this difference.

(3)

1 .....

2 .....

.....

.....

3 .....

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(Total for Question 1 = 8 marks)

