

BIOLOGY
Worksheet**LW9 - THE DAVSON-DANIELLI MODEL**

Q1) The Davson-Danielli model was proposed in 1935, describing the structure of cell membranes.

a) How is the plasma membrane described in the Davson-Danielli model?

b) Describe the fluid mosaic model.

[2 marks]

c) Give two differences between the Davson-Danielli model and the fluid mosaic model.

[2 marks]

[4 marks]

Q2) When viewed under a transmission electron microscope, cell membranes have a trilaminar appearance.

a) Explain what is meant by cell membranes having a trilaminar appearance?

b) What do each of the layers represent and what did Davson & Danielli conclude from this?

[1 mark]

c) Which of the two following statements is incorrect?

[3 marks]

A In the Davson-Danielli model proteins are hydrophilic

B The phospholipid tails in the Davson-Danielli model are hydrophobic

C In the Davson-Danielli model proteins are hydrophobic

D The phospholipid tails in the Davson-Danielli model are hydrophilic

[2 marks]

Q3) The Davson-Danielli model was later falsified when new experimental evidence emerged in the 1960s and 1970s.

a) One way in which this model was falsified was by tagging proteins with fluorescent markers. Explain the process of tagging proteins?

b) Explain what was concluded from this experiment?

[2 marks]

[3 marks]

c) Which of the following is correct?

- A** Proteins in the cell membrane were found to have similar properties
- B** Evidence was found that proteins were mostly hydrophilic
- C** Proteins in the cell membrane were only found on the surface of the cell membrane
- D** Experimental evidence found that proteins were fluid

[1 mark]

d) Freeze fracture was used to split the membrane. Explain what was concluded from this?

[2 marks]

[TOTAL 22 MARKS]