BIOLOGY
Mark Scheme

LM9 - THE DAVSON-DANIELLI MODEL

Q1)

a) The Davson-Danielli model describes the cell membrane as being made up of two layers of phospholipids **(1)** which were 'sandwiched' in by two layers of proteins on either side **(1)**

b) The fluid mosaic model describes the cell membrane as a 'mosaic' of different molecules **(1)** which give it its fluid character **(1)**

c) In the Davson Danielli model, proteins are only found on the surface of the membrane **(1)** however in the fluid mosaic model, proteins can be found embedded within the membrane as well as being on the membrane surface **(1)** Another difference is that the Davson-Danielli model assumes that proteins are hydrophilic **(1)** while the in the fluid mosaic model, proteins are hydrophobic and hydrophilic depending on where it is in the membrane **(1)**

Q2)

a) This means that the membrane has three distinct layers **(1)**

b) The lightest layer represents the phospholipid bilayer **(1)** while the two darker layers represent proteins **(1)** This suggested that the phospholipid bilayer was 'sandwiched' between two layers of proteins on either side **(1)**

c) C **(1)** D **(1)**

Q3)

a) Two cells were marked with different coloured fluorescent markers **(1)** which were then fused together **(1)**

b) It was found that proteins were able to move around **(1)** as the two different colours had mixed together **(1)** suggesting proteins were not fixed in layers **(1)**

c) D – Experimental evidence found that proteins were fluid **(1)**

d) After splitting the cell membrane it was found that there was an irregular, rough surface **(1)** This suggested that proteins were embedded within the membrane and were not exclusively found on the surface of the cell membrane **(1)**