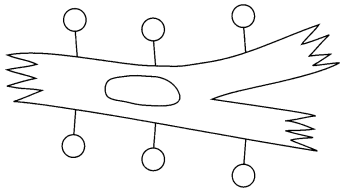
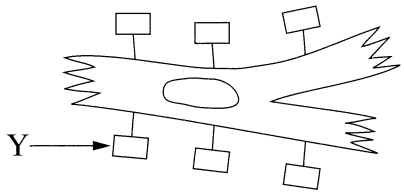
Question 28 (8 marks)

Organ transplants may trigger an immune response which can lead to organ rejection.

The diagram below represents a model of two heart cells, one from a transplant recipient and one from a donor.



Recipient heart cell



Donor heart cell

(a) What does Y represent? **1**

Y represents the individual person's DNA and genetic make-up.

(b) Assess the effectiveness of the model in explaining the cause of organ rejection in a transplant recipient. **3**

Each person has a different genetic makeup that is unique to them although they may possess similar characteristics, in cell make up and blood compatability's, their DNA may not be a match and therefore may cause the body to reject the organ and anti-rejection drugs had to be taken to ensure that the bodies system does not attack the newly donated organ.

(c) Name and outline the role of TWO types of T lymphocytes in organ rejection. **4**

White blood cells and the immune system may start to reject the newly donated organ therefore not fighting, thus making it harder to fight infections. T lymphocytes assist with the production of anti-bodies therefore making it harder for a newly donated organ to survive in a body that wants to reject it.