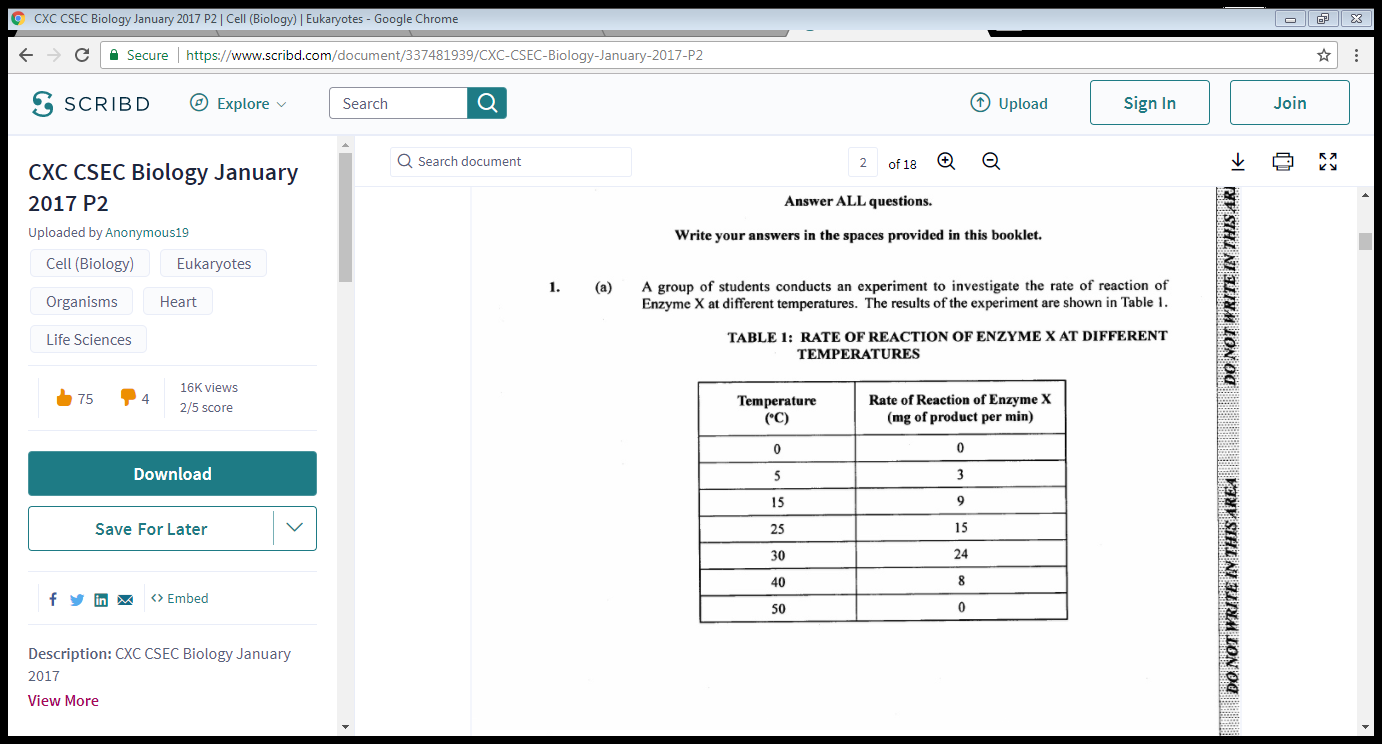
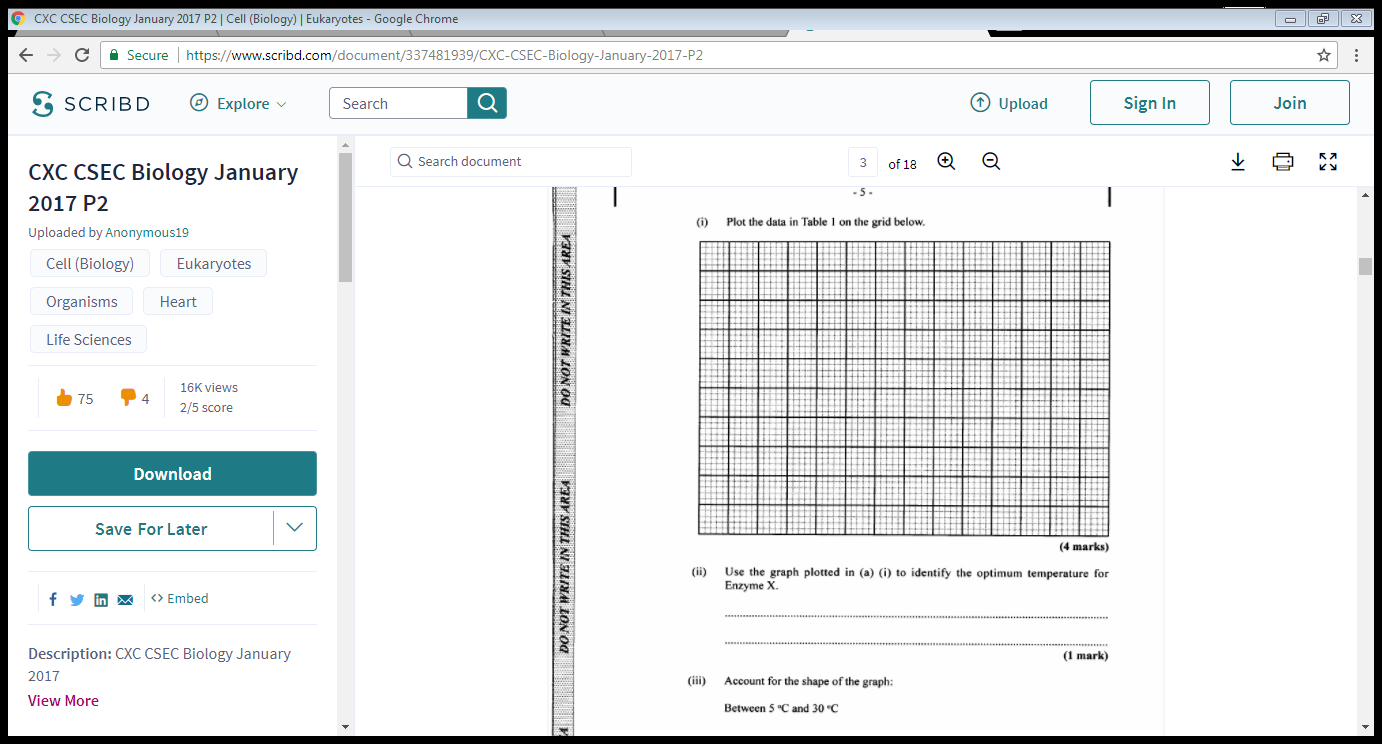
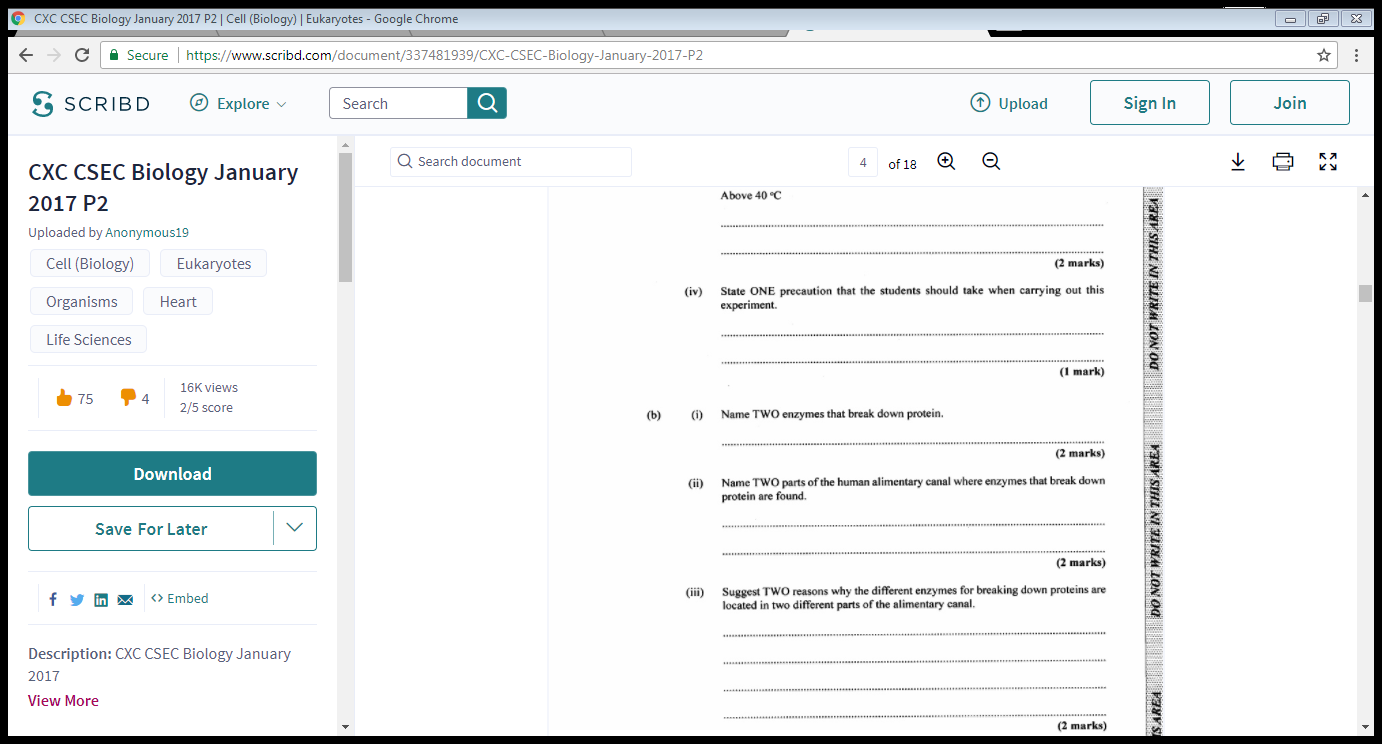
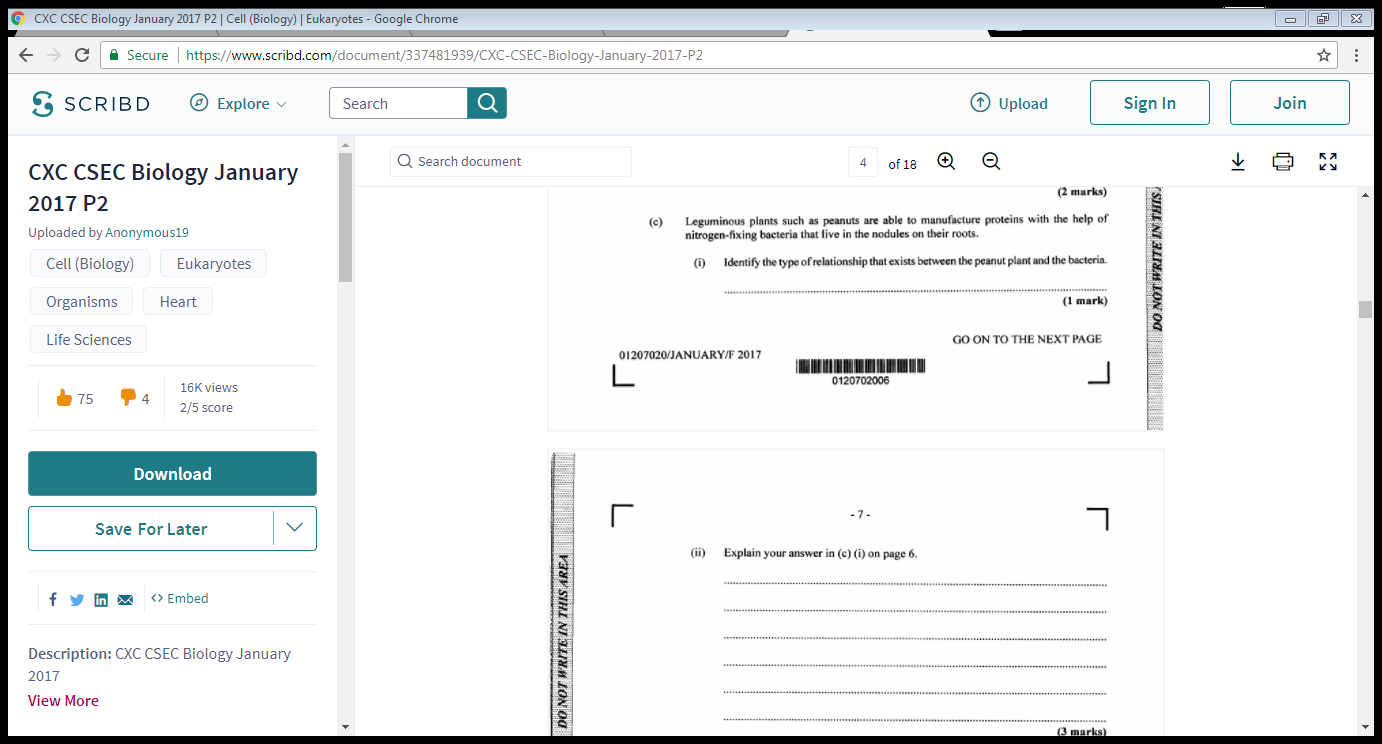
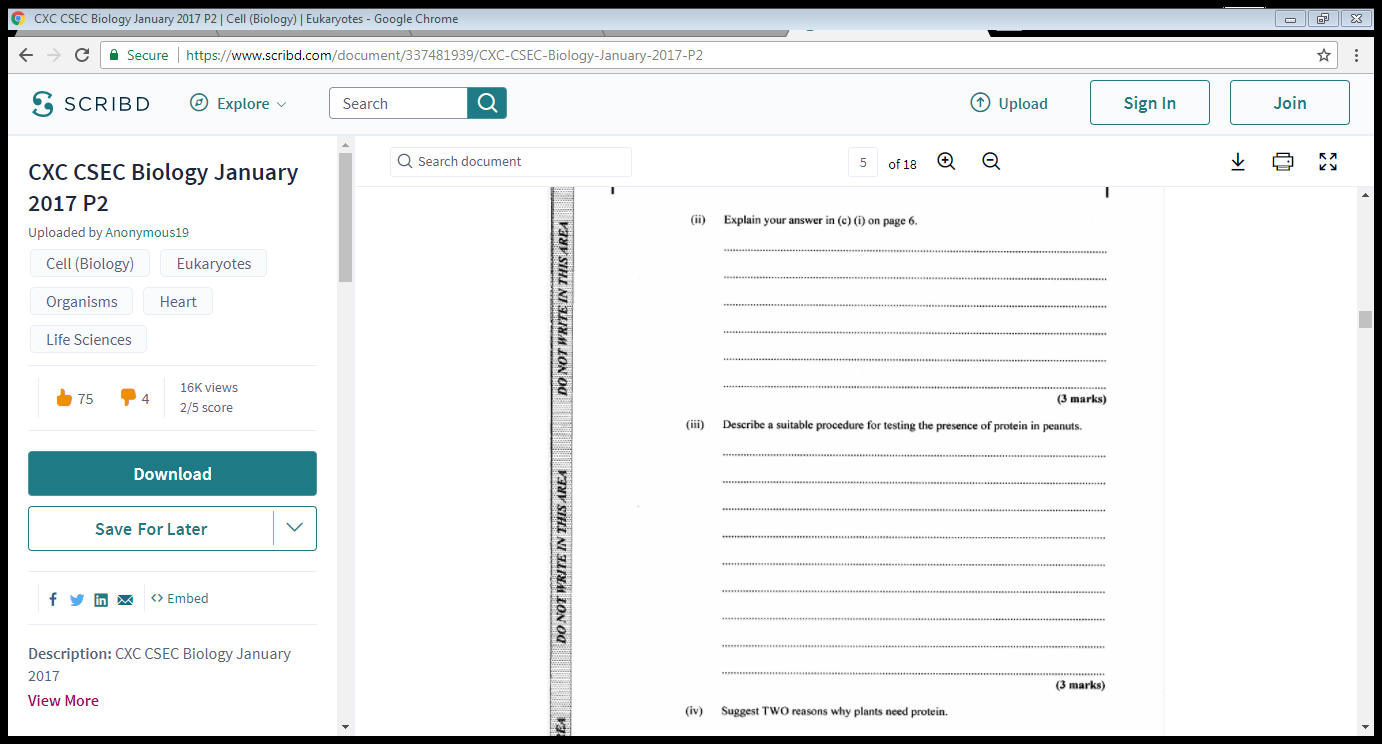
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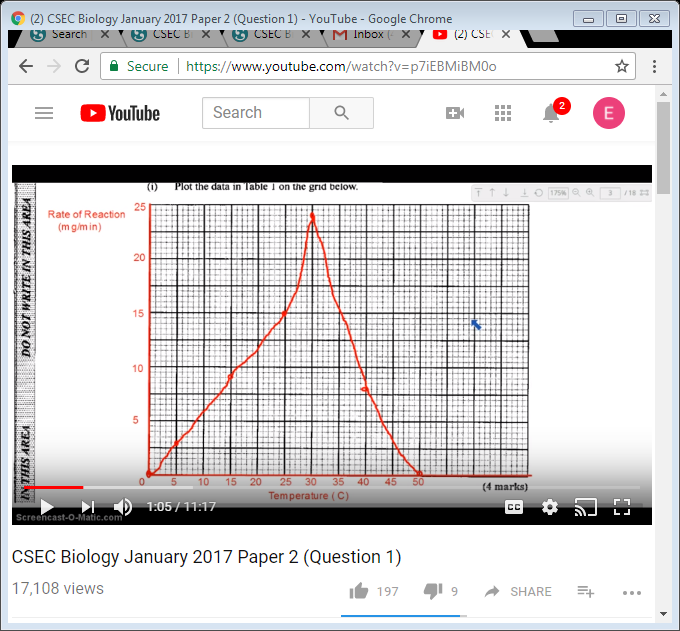




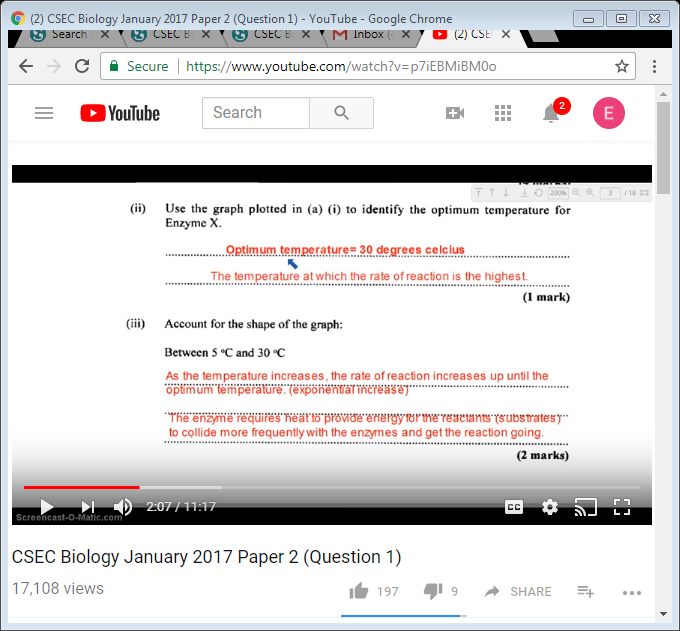


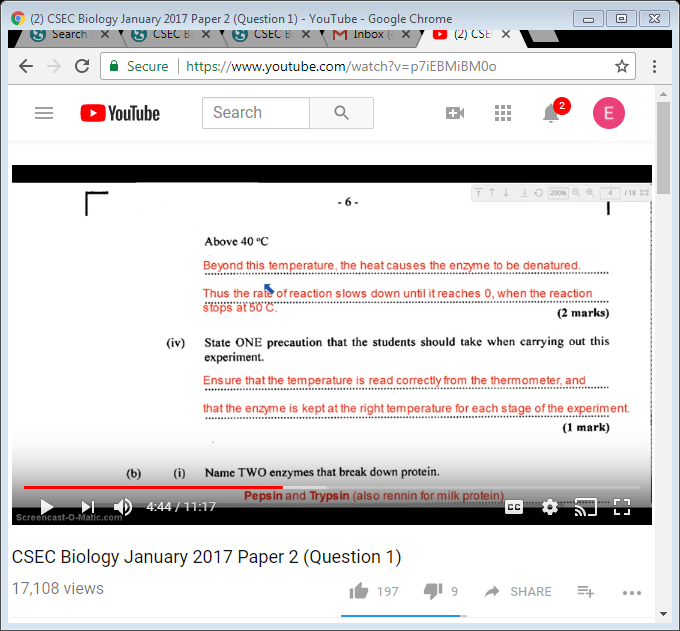




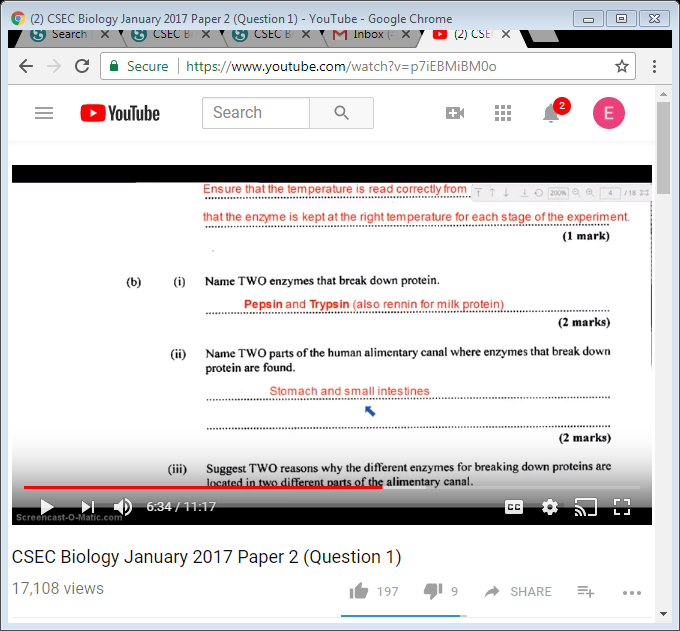
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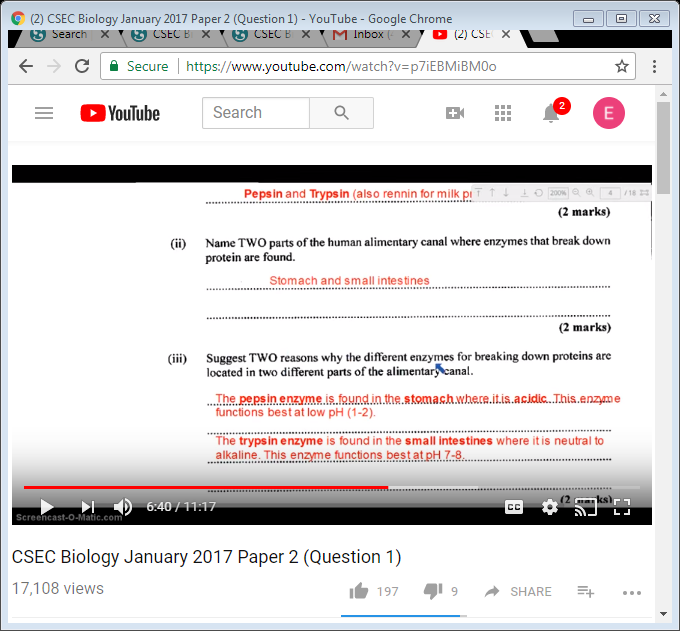
1 i.

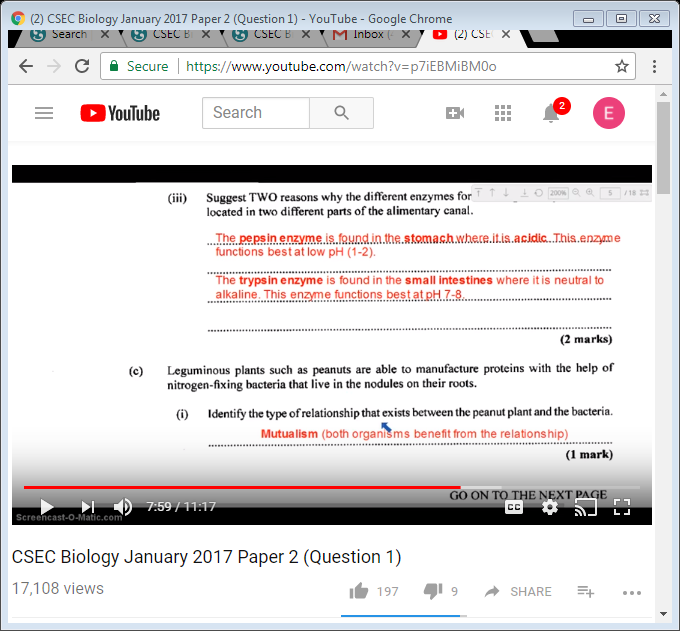




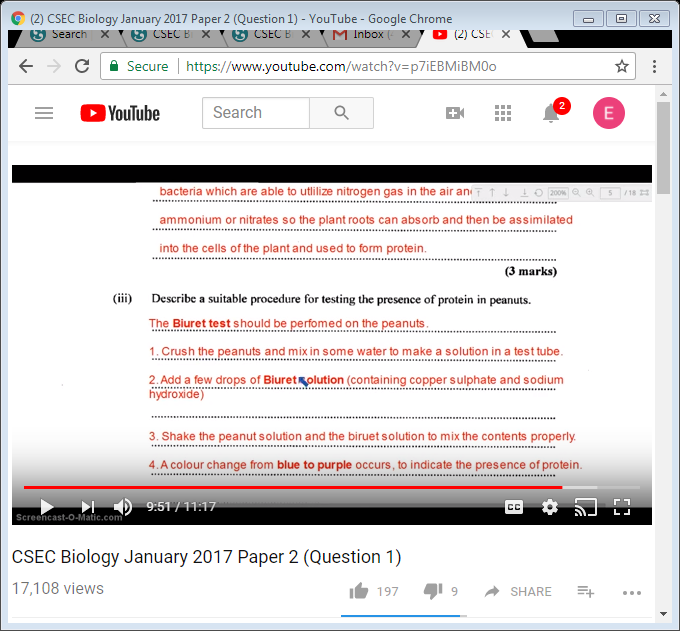
B.

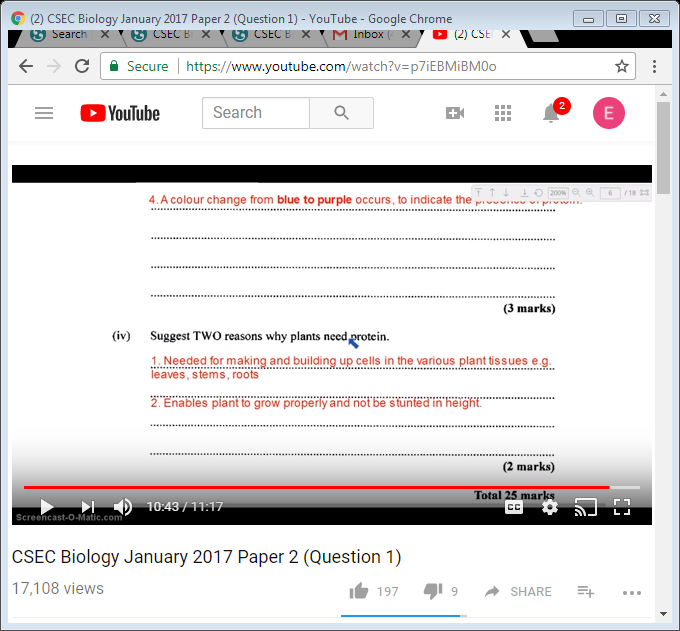


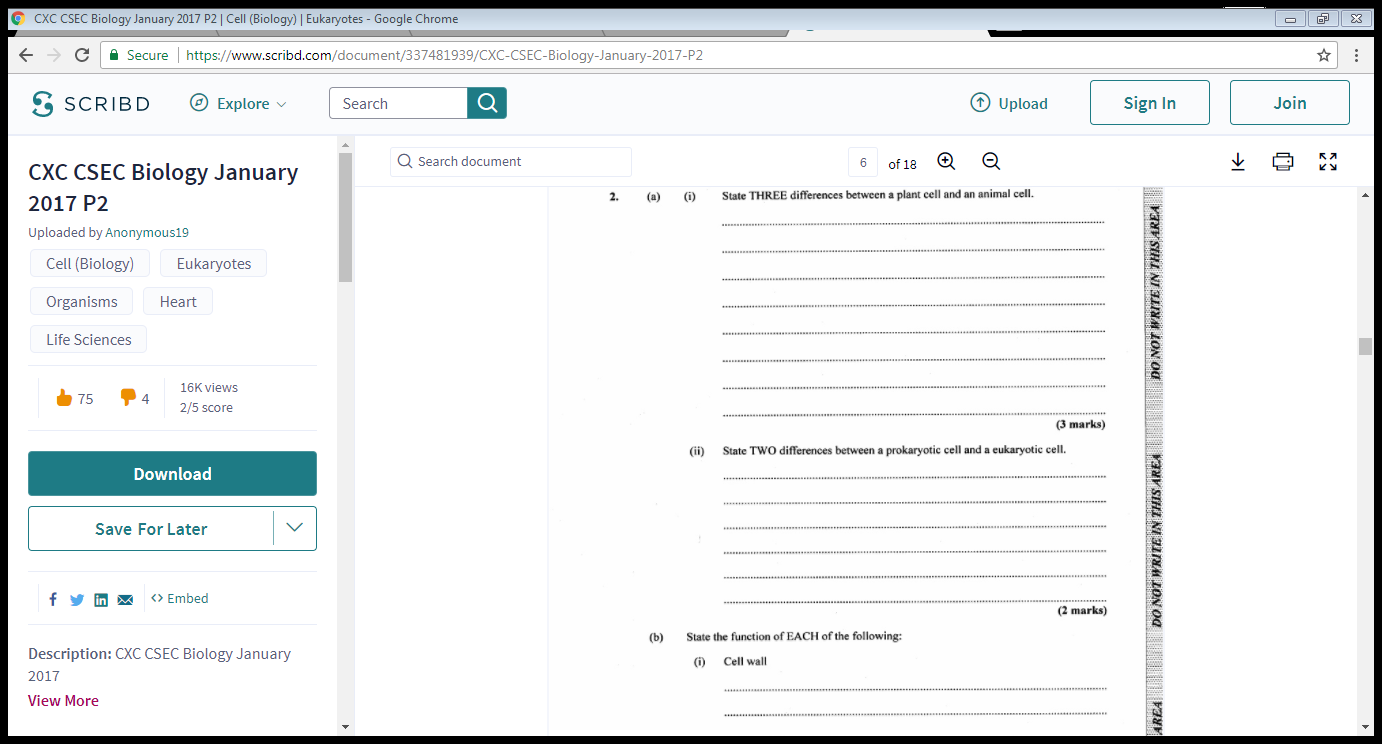


C. 

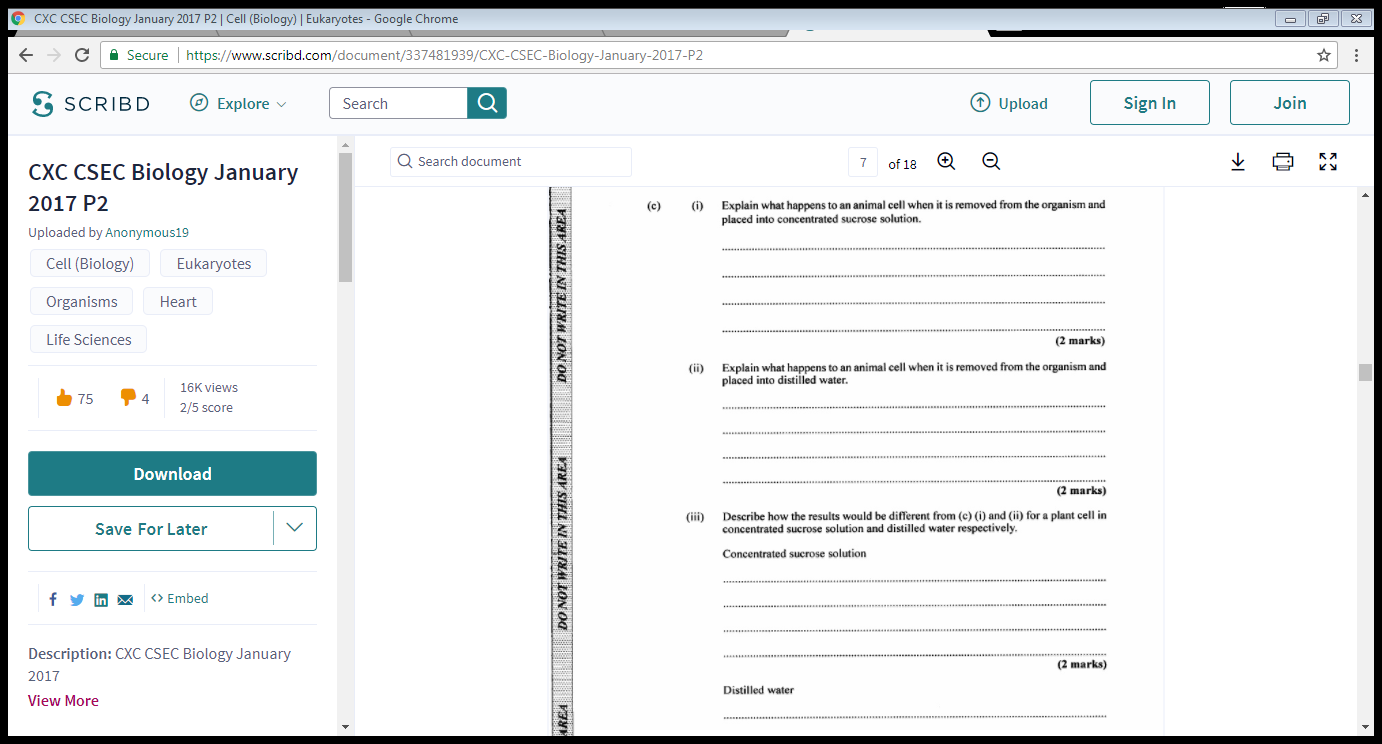




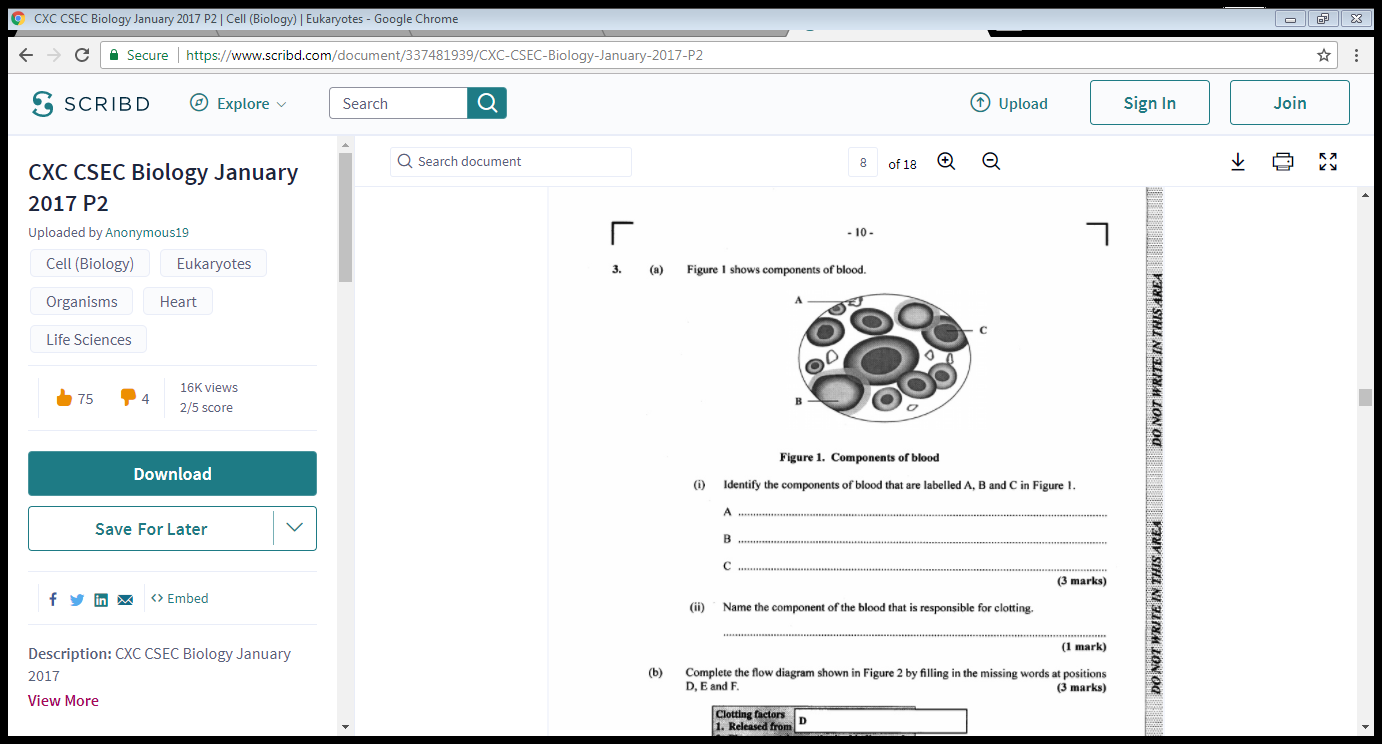


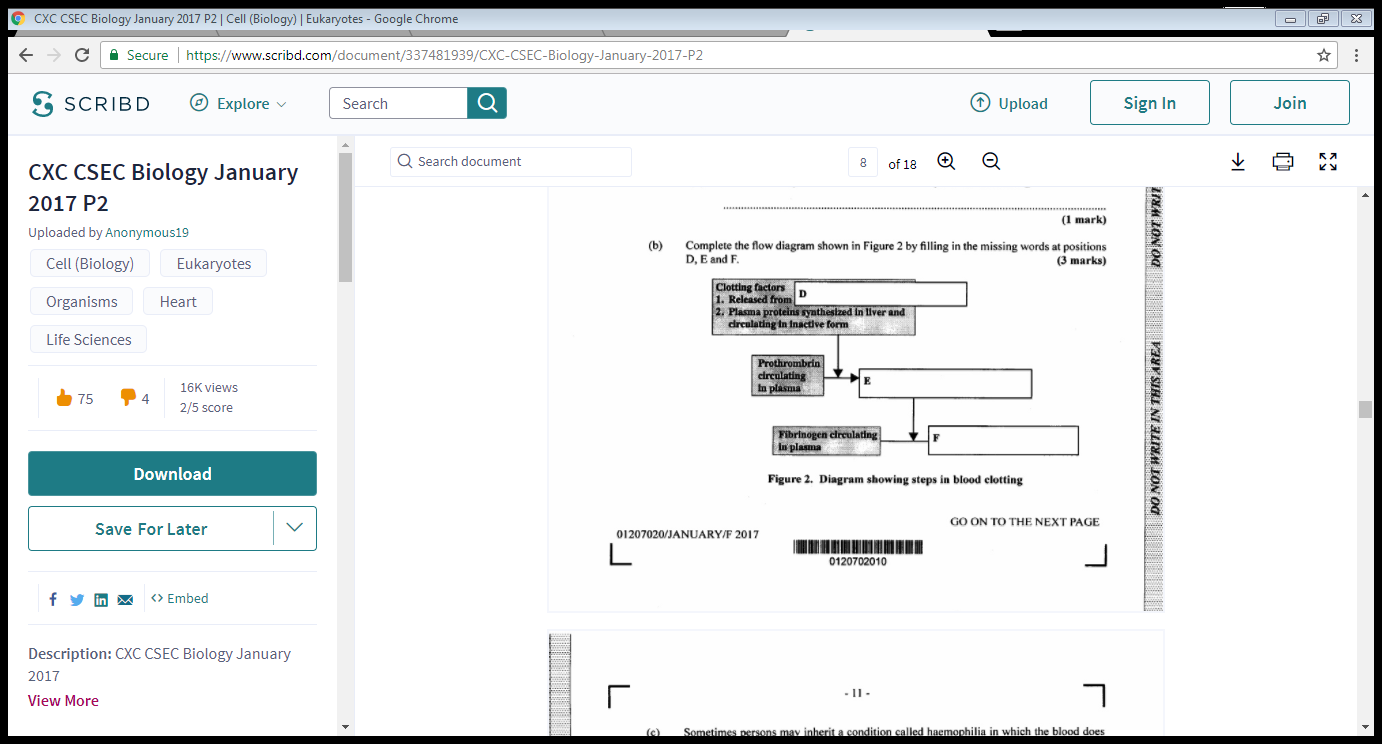


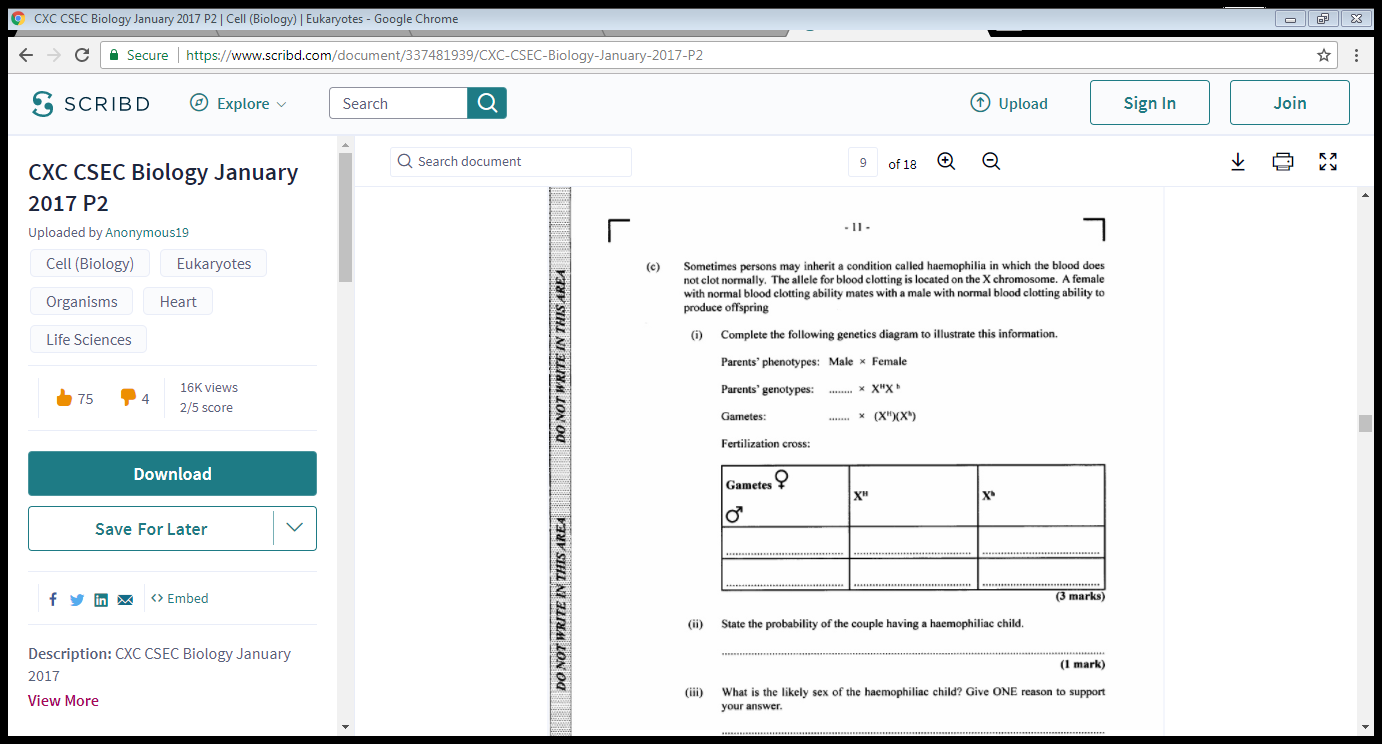
ii. Cell membrane:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



#2 answers:

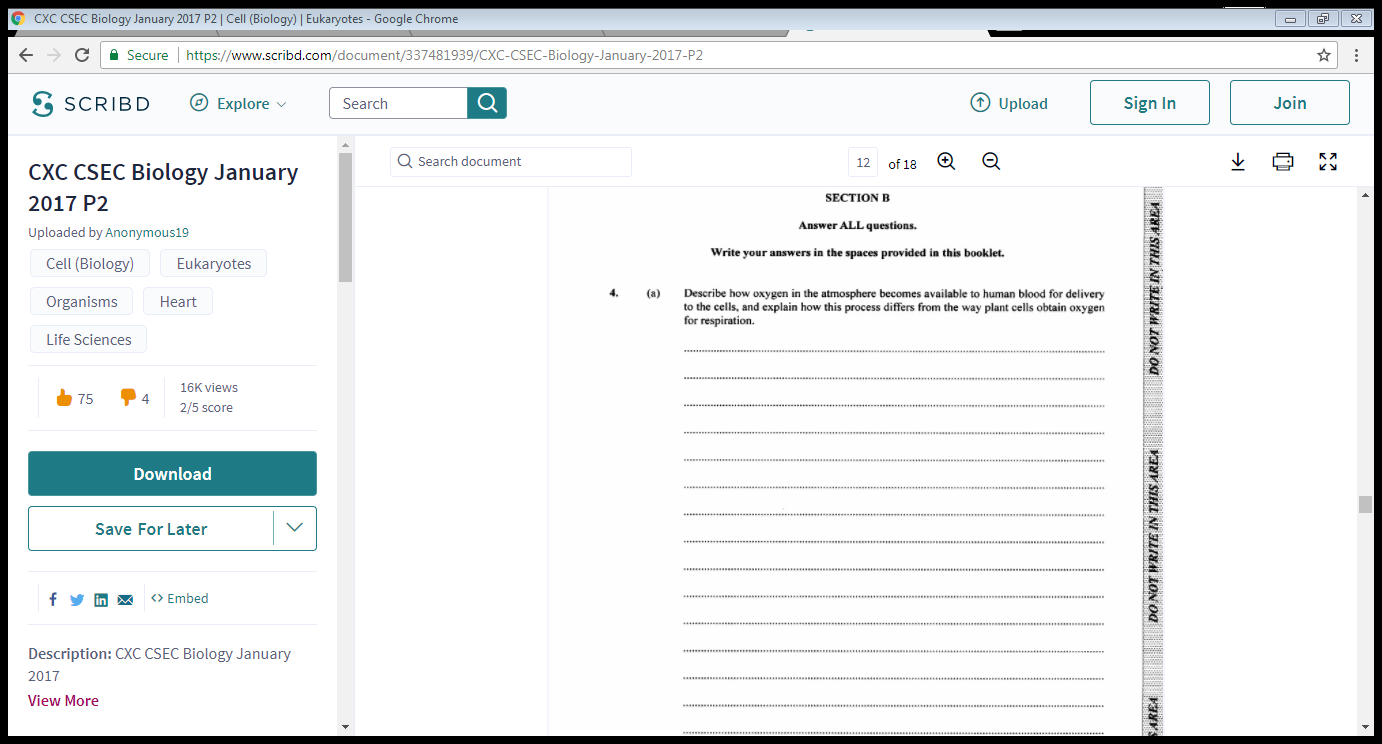






D. Suggest ONE reason why haemophiliacs may be more susceptible to infectious disease.

15 marks.



b. Suggest SIX reasons why humans who smoke heavily have less oxygen available to the cells for respiration. 6 marks.

15 total.

5. Blood that has been oxygenated in the lungs must first be pumped through the heart before it is sent to all the other organs of the body. Describe the pathway that blood takes as it flows into the heart from the lungs, until it is pumped out of the heart to be sent to the rest of the body. 4 marks.

ii. Identify TWO physiological diseases that affect the circulatory system. 2marks.

b. Chemotherapy is a treatment that destroys both the malignant (bad) cells and the good cells in the body. Explain why a person undergoing chemotherapy would have decreased natural immunity. 4 marks.

c. Peter who has not had a tetanus vaccine, gets his foot punctured by a nail. He is given a tetanus antiserum injection at the hospital. Suggest why he is given an antiserum injection instead of a vaccine. 5 marks.

6. a. Describe how genetic engineering is used to produce human insulin using the bacterium ***E. Coli.***

b. Discuss THREE differences between engineering and artificial selection used by farmers to produce improved varieties of crop plants. 6 marks.

ii. Suggest THREE advantages of using genetic engineering to produce insulin. 3 marks.