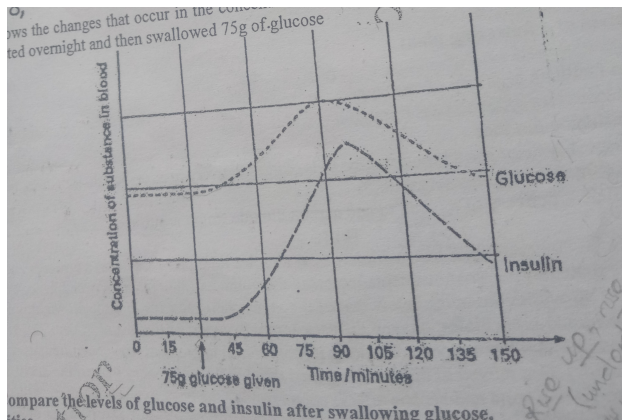


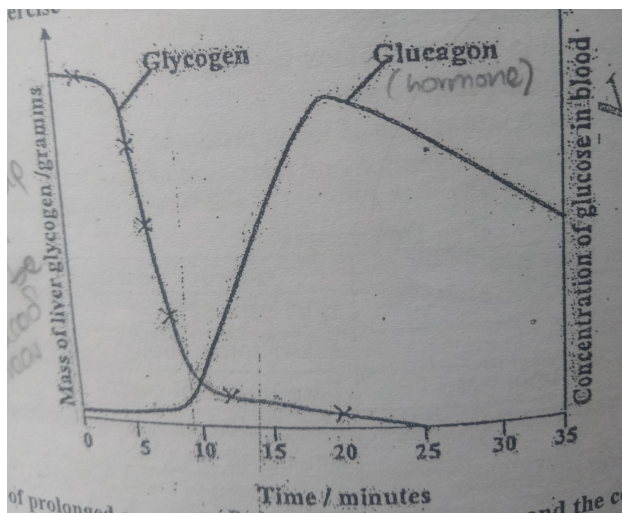
Biology discussion questions for zoom lesson scheduled on 25th June 2021 at 3:00 pm

Topic: homeostasis

1. Figure 1 shows the changes that occur in the concentration of insulin and glucose in the blood stream of a person who had fasted overnight and then swallowed 75g of glucose.



- a)(i). Compare the levels of glucose and insulin after swallowing glucose
- (ii). Explain the changes in the concentration of glucose and insulin
- (iii). Explain how the concentration of insulin would change if the person engaged in exercise.
- b) The figure below shows the changes in the amount of liver glycogen and the glucose concentration in blood of a person during a prolonged exercise.



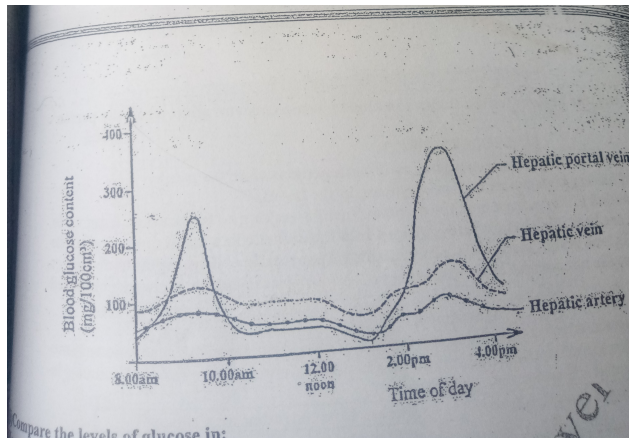
- (i). Describe the effect of prolonged exercise on the amount of glycogen and the concentration of glucagon in blood.

(ii). Explain the trend in the mass of glycogen and concentration of glucagon in blood. (14 marks)

(iii). Suggest how continuous supply of glucose is ensured after the 25th minute.

Question 2.

(a). The figure below shows the average blood glucose levels in three major vessels of the liver of an individual who had meals at 7:00 a.m and 1:00 p.m. Use the information to answer the questions that follow.



(i) Compare the levels of glucose in:

Hepatic artery and hepatic vein (04 marks)

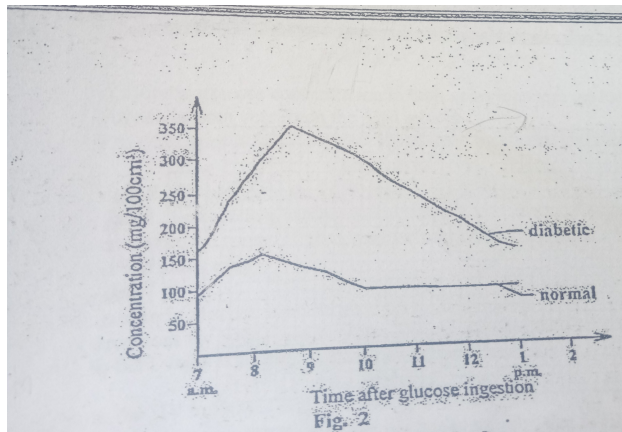
Hepatic artery and hepatic portal vein (04 marks)

(ii). Explain the differences in the level of glucose in the:

Hepatic artery and hepatic vein (09 marks)

Hepatic artery and hepatic portal vein (09 marks)

(b). The figure below shows the blood glucose levels in a normal and diabetic individual, after both individuals were given a sugar solution at 7:00 am. Study the information and answer the questions that follow.



- (i). Compare the levels of blood glucose between the two individuals. (05 marks)
- (ii). Give an explanation for the observed pattern of levels of glucose in the two individuals. (05 marks)
- (c). What is the significance of the physiological process illustrated in figures 1 and 2? (04 marks)

END. Please look at the questions and prepare some answers as soon as possible so that we can discuss when the lesson reaches and I hope members have paid some money to Mr. Siraj for teachers' data and upkeep.