

CSEC HUMAN & SOCIAL BIOLOGY

Homework Assignment 2

Section A: Photosynthesis, Food chains and Nutrient Cycles

1. a) Briefly describe the process of photosynthesis in plants including the raw materials required, how the plant obtains them and the products. (5 marks)

- b) A variegated plant was kept in a dark cupboard to destarch it and then exposed to normal conditions favourable for photosynthesis.
 - i) Outline the steps taken to test for starch in a leaf taken from the plant. Include all reagents and materials used. (4 marks)
 - ii) Describe your expected observations after the starch test has been conducted on the variegated leaf. (1 marks)

(10 marks)

2.

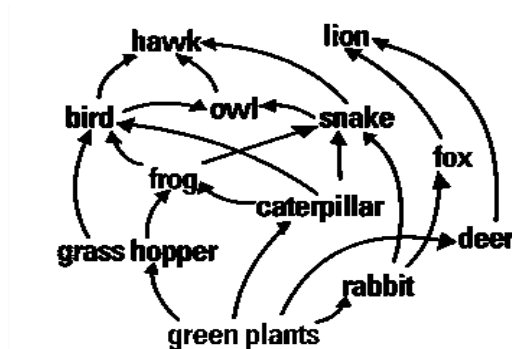


Figure 1: Food web

- a) Identify from the food web shown in Figure 1, a food chain with FOUR trophic levels. Draw the food chain and give the status of each organism in the food chain [e.g. producer/primary consumer etc.] (4 marks)
- b) i) State the organism that will possess the LEAST amount of energy in your food chain. Give your reason. (2 marks)
 - i) Name TWO herbivores in the food web. (2 marks)
- c) Discuss the effect that removing the fox from the food web would have on the other organisms in the web. (2 marks)

(10 marks)

3. a) With the aid of a simple diagram describe the processes involved in the carbon cycle showing how carbon enters and leaves the ecosystem. (5 marks)

b) Discuss the important role of bacteria in the nitrogen cycle by outlining FOUR processes in the cycle in which nitrogen is converted into different forms. (5 marks)

(10 marks)

Total Marks: 30