



**KZN CLUSTERED DISTRICTS
COMMON ASSESSMENT**

GRADE 11

**LIFE SCIENCES
ASSIGNMENT TASK 3
PHOTOSYNTHESIS AND ANIMAL NUTRITION
MAY 2026**

Stanmorephysics.com

MARKS: 50

DURATION: 1 HOUR

N.B. This question paper consists of 7 pages including this page.

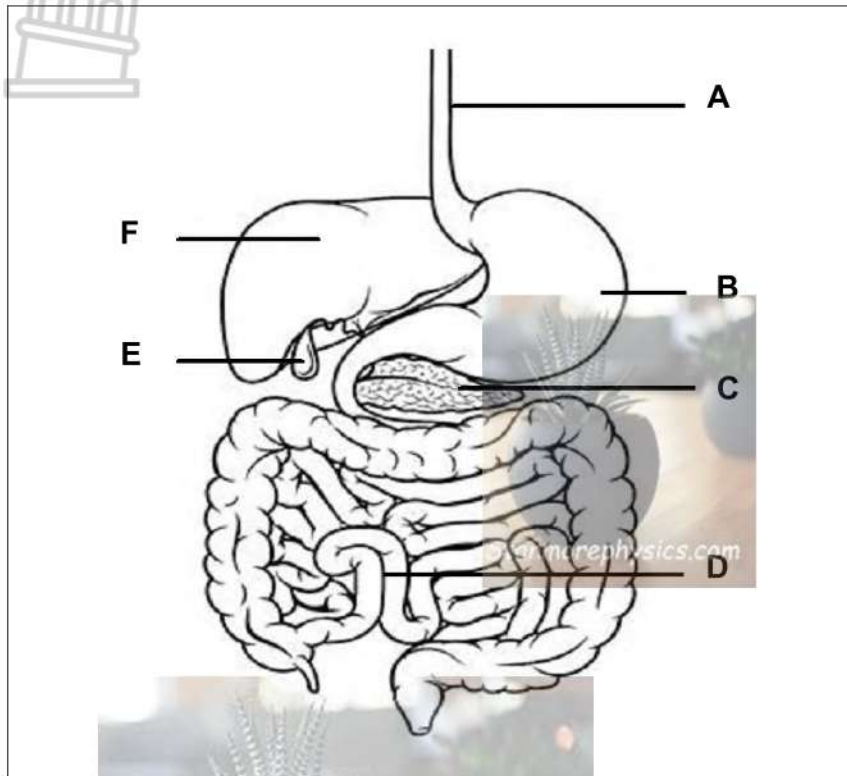
INSTRUCTIONS AND INFORMATION

Read the following instructions carefully before answering the questions.

1. Answer ALL the questions.
2. Write ALL the answers in the ANSWER BOOK.
3. Start the answers to EACH question at the top of a NEW page.
4. Number the answers correctly according to the numbering system used in this question paper.
5. Present your answers according to the instructions of each question.
6. Make ALL drawings in pencil and label them in blue or black ink.
7. Draw diagrams, tables or flow charts only when asked to do so.
8. The diagrams in this question paper are NOT necessarily drawn to scale.
9. Do NOT use graph paper.
10. You must use a non-programmable calculator, protractor and a compass, where necessary.
11. Write neatly and legibly.

QUESTION 1

1.1 The diagram below shows the digestive system of humans.



1.1.1 Give the LETTER and NAME of the part that is responsible for the:

(a) Storage of bile (2)

(b) Removal of excess amino acids (2)

1.1.2 Describe the chemical digestion of protein in part B. (4)

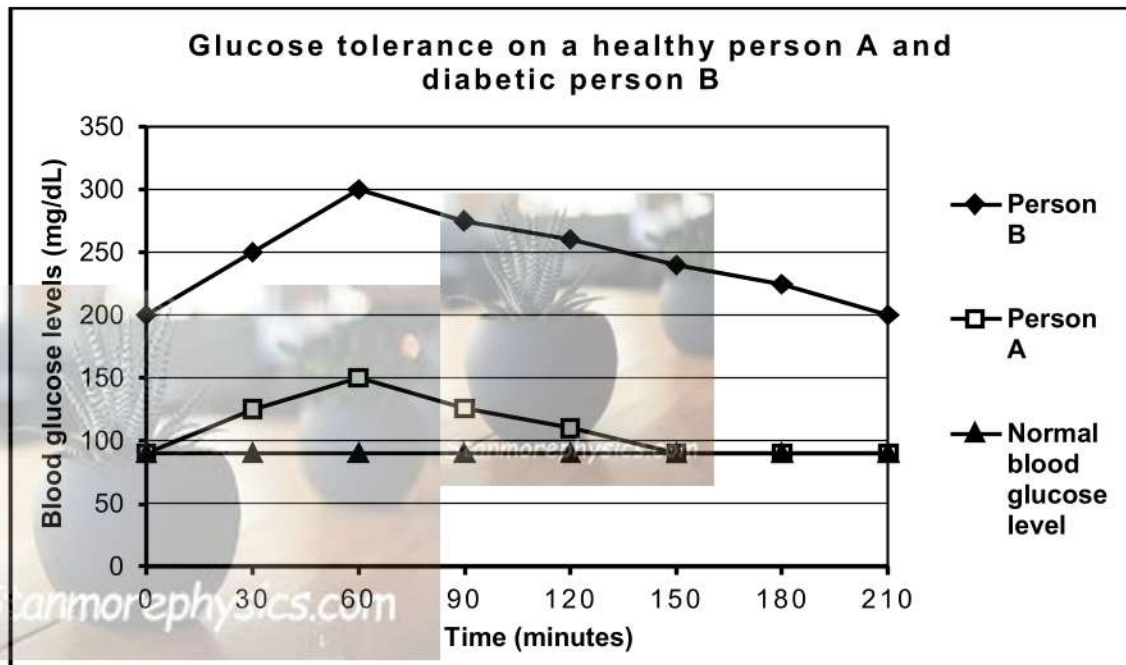
1.1.3 Villous atrophy is a medical term for the absence of villi in the small intestines.

Explain the consequence in the absorption of nutrients in part D if a person suffers from villous atrophy. (4)

(12)

1.2 The graph below shows the results of a glucose tolerance test on a healthy person (A) and a diabetic person (B).

- After fasting for 10 hours each person was given 50 ml of glucose solution.
- The amount of glucose in their blood was measured every 30 minutes for 3 hours.



1.2.1 Using the graph, determine how long it would take for the glucose concentration of a:

- (a) Healthy person to return to a normal level after consuming glucose solution (1)
- (b) Diabetic person to return to normal after consuming glucose solution (1)

1.2.2 State the:

- (a) Greatest concentration of glucose in a diabetic person's blood. (1)
- (b) Purpose of fasting for 10 hours before the investigation. (1)

1.2.3 Describe the homeostatic control of high blood glucose level in humans. (5)

(9)

QUESTION 2

2.1 Photosynthesis is the process by which green plants make their own food using light energy.

2.1.1 Give TWO ways in which photosynthesis is biologically important. (2)

2.1.2 Describe the process of light phase. (4)

2.1.3 Draw a labelled diagram of an organelle where photosynthesis occurs. (4)



(10)

QUESTION 3

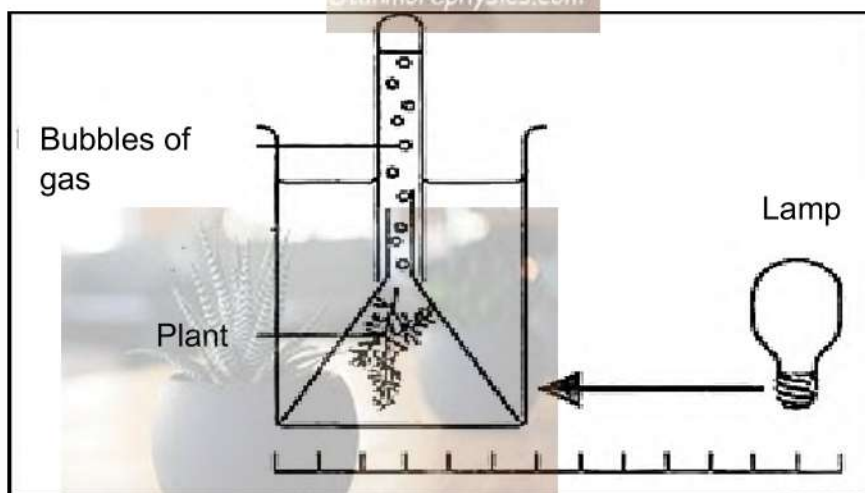
- 3.1 An investigation was conducted to measure the rate of photosynthesis when a lamp is placed at different distances from the plant.

When light shines on tape grass-(*Vallisneria sp*), bubbles of gas are released.

The rate at which bubbles of gas are released can be used to measure the rate of photosynthesis.

The procedure is as follows:

- The tape grass was exposed to light for 5 minutes before measurements were taken.
- The number of bubbles released in a minute at different distances was recorded.
- The apparatus was set up as shown in the diagram below.



The table below shows the number of bubbles released by the *Vallisneria spiralis* plants when the light source was at different distances.

DISTANCE BETWEEN THE TAPE GRASS AND LIGHT SOURCE (METERS)	NUMBER OF BUBBLES GIVEN OFF IN ONE MINUTE
1,0	8
0,5	28
0,25	105
0,125	105



- 3.1.1 State the aim for this investigation. (2)
- 3.1.2 Identify the dependent variable for this investigation. (1)
- 3.1.3 Calculate percentage increase in the number of bubbles when the light source was shifted from 1,0 m to 0,5 m. Show ALL working INCLUDING the correct unit. (3)
- 3.1.4 State:
- (a) how the variable mentioned in QUESTION 3.2 was measured. (1)
 - (b) TWO factors that should have been kept constant. (2)
 - (c) TWO ways in which the reliability of the results could have been increased. (2)
- 3.1.4 Explain the effect if the lamp is kept close to the plant for a long period of time on the rate of photosynthesis. (2)
- 3.1.5 Draw a bar graph using the data on the table above. (6)

(19)

TOTAL: 50