

BIOLOGY PAPER 2 FORM 3

NAME

ADM

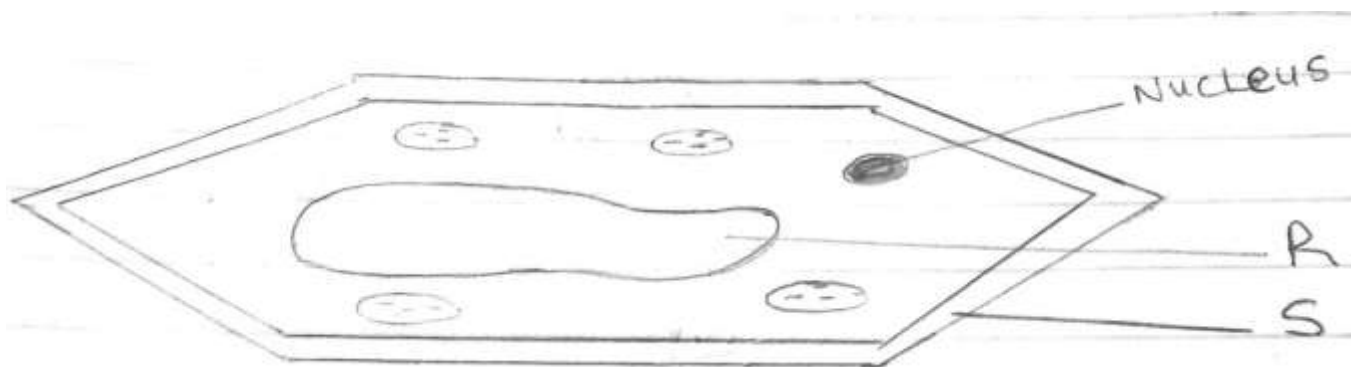
CLASS

Answer all the questions in section A in the spaces provided.

In section B answer question 6 (Compulsory) and either question 7 or 8 in the spaces provided after question 8.

SECTION A (ANSWER ALL QUESTIONS)

1(i) The diagram below represents a plant cell.



(a) Name a carbohydrate which forms part of the structure labelled S. (1mk)

(b) State two functions of the part labelled R (2mks)

(c) Name two structures present in the diagram but absent in an animal cell (2mks)

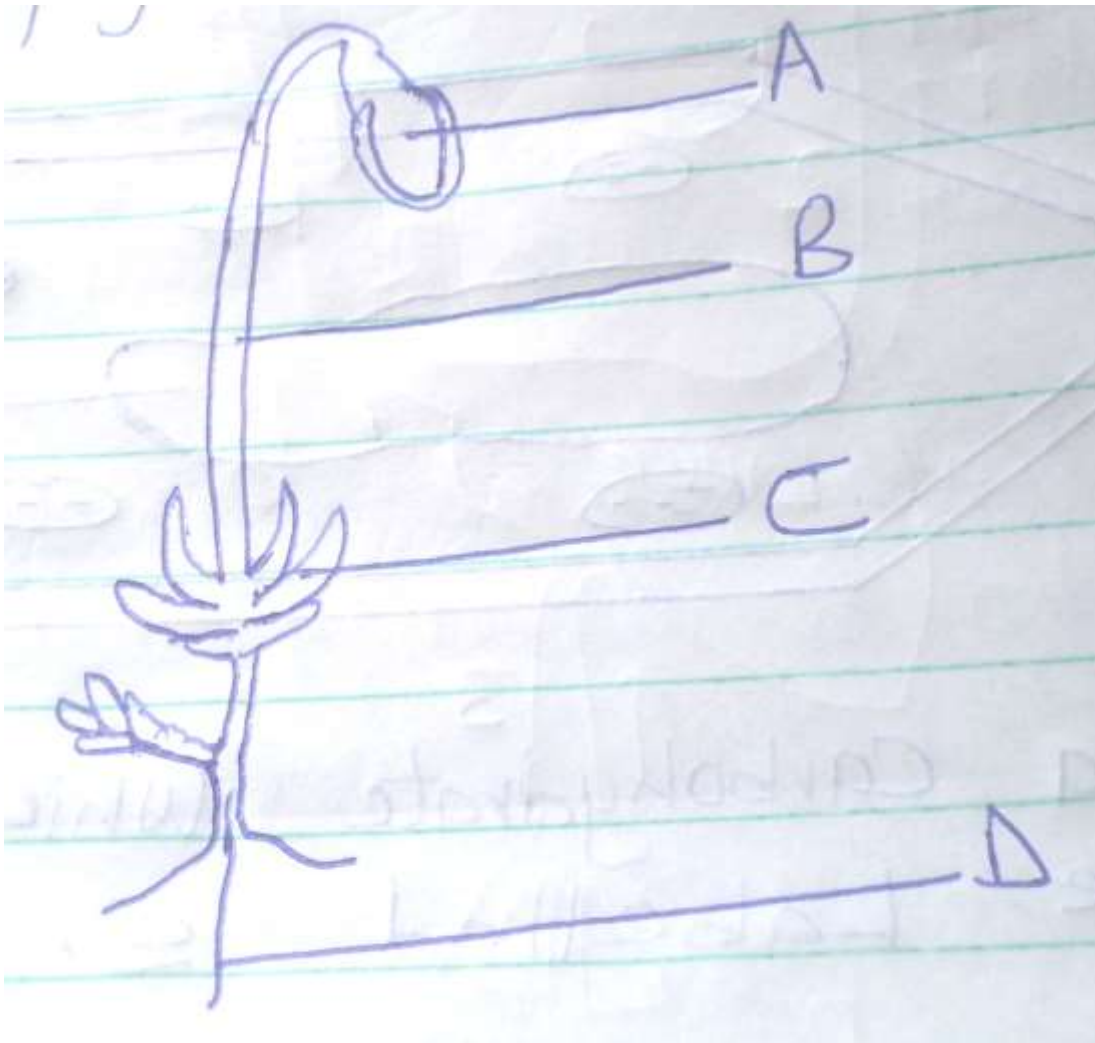
(ii) Name the organelles that perform each of the following functions (3mks)

(a) Excretion in amoeba

(b) Carries out digestion and destruction of worn out cell organelles

(c) Movement in paramecium

2(A) The diagram below represents a plant in the division Bryophyta.



(i) Name the parts labeled B and D (2mks)

B -

D -

(ii) State one function for each of the parts labelled A and C (2mks)

A -

B -

(B) (a) To which phylum and class does the following organism belong ?

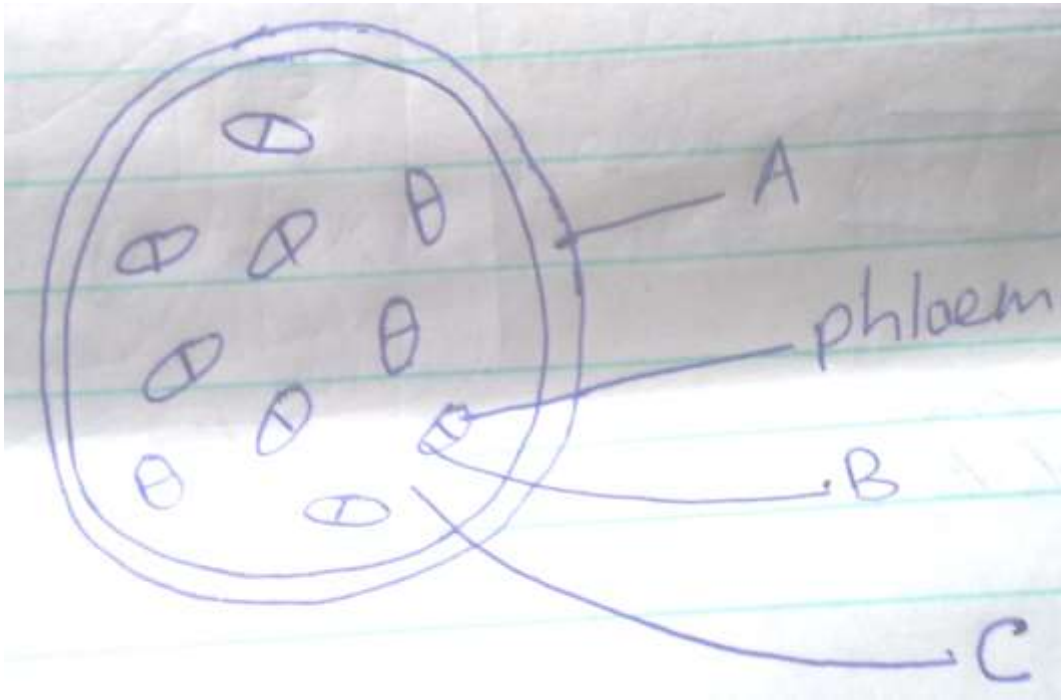


Phylum -

Class -

(b) Using observable features in the diagram, give two reasons for the phylum you have stated in (a) above

3. The figure below shows a transverse section of a monocot stem. Study it and answer the questions that follow.



(a) Name the parts labeled A, B and C (3mks)

A -

B -

C -

(b) State the function of the part labelled C (2mks)

(c) State three differences between a monocot stem and a dicot stem (3mks)

4. The figure below illustrates a part of kidney nephron



(a) Name the parts labeled A, B and D (3mks)

A -

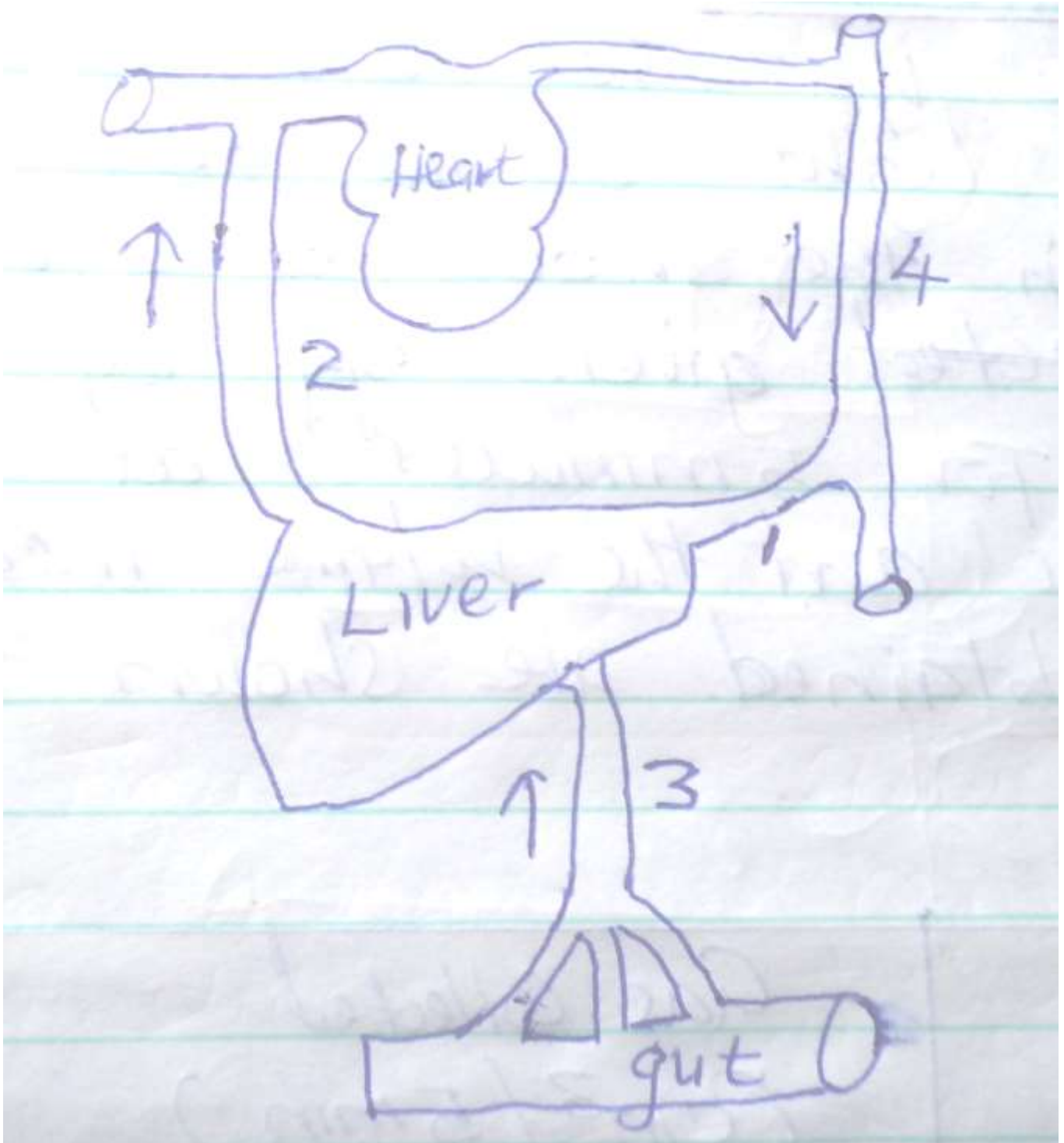
B -

D -

(b) State one observable difference between part A and B

(c) Name the fluid that is found in part D (1mk)

5. Below is a sketch diagram showing the parts of a mammalian circulatory system.



- (a) Explain why the level of blood sugar in vessel 2 would be higher than that in vessel 3 during fasting (2mks)

- (b) Name the vessel that has the highest concentration of urea among the vessels labelled 1,2 and 3 (1mk)

- (c) How is vessel 3 structurally adapted to perform its functions. (3mks)

- (d) Name the vessels labelled 2 and 4
2 -
4 -

SECTION B (40MKS)

6. An experiment was set up to investigate the effect of light on the rate of photosynthesis in the shoot of a water plant. The gas given off by the shoot was collected for 5 minutes at different light intensities and the volume measured. The results obtained are shown on the table below.

Light intensity (units	Gas collected (cm ³ / 5min)
1	0.35
2	0.60
3	0.85
5	1.20
10	1.55
20	1.70
30	1.80
40	1.79
50	1.79

- (a) Using the data given in the table, plot a graph of the volume of the gas collected against light intensity. (6mks)

- (b) Account for the rate of gas production in the following intervals of light intensity.

(i) 1 - 10 (2mks)

(ii) 30 – 50

(c) Write a word equation for the process of photosynthesis (2mks)

(d) State the products of the light stage of photosynthesis

(e) State the role of light in photosynthesis.

(f) Other than light intensity, name two other factors that affect the rate of photosynthesis.

7. Explain the economic importance of the organisms of each of the following kingdoms.

(a) Monera (10mks)

(b) Fungi

(10mks)

8. Explain how abiotic factors (Environmental factors) affect plants. (20mks)