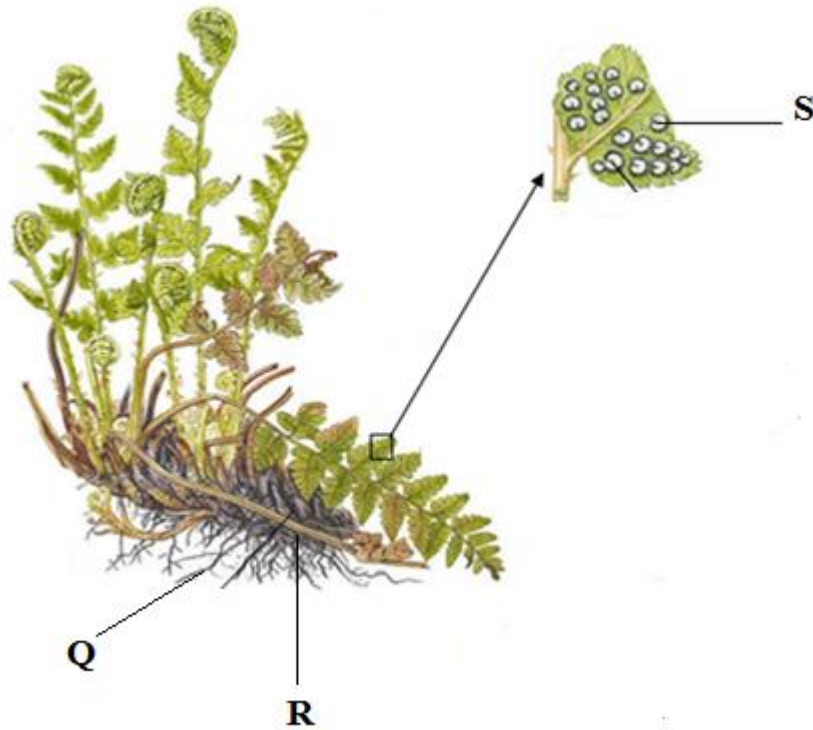


**SUNSHINE SECONDARY SCHOOL MOCK 2019**  
**BIOLOGY PAPER 2**

**SECTION A**

*Answer all questions in this section*

1. The diagram below indicates an organism that grows under shaded places with damp conditions. Study it and answer the questions that follow.



- (a) Name the division to which the specimen belongs. **(1 mark)**

.....

- (b) Name and state the functions of the parts labelled Q, R and S. **(6 marks)**

Q

Name.....

Function.....

R

Name.....

Function.....

S

Name .....

Function.....

(c) Name the two body forms of the organism in its alternation of generation.  
**(2 marks)**

.....

.....

2. In cattle the gene for red colour is represented by letter R and that of white colour as W. A Red bull and a white cow were crossed and all the offspring were Roan.

(a) Give a reason for the appearance of roan cattle in F1 generation. **(1 mark)**

.....

(b) Using a punnet square work out the F2 generation.

**(4 marks)**

(c) State the genotypic and phenotypic ratio of the F2 offspring above.

**(2 marks)**

.....

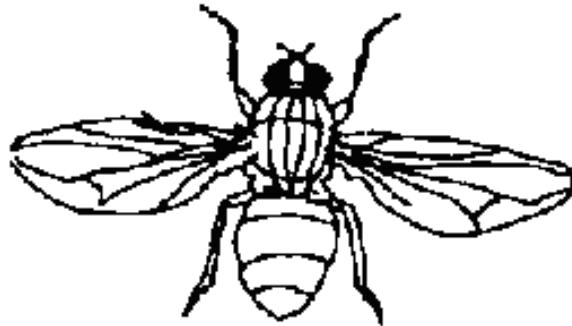
.....

(d) Name the molecule that carries genetic information in eukaryotic cells.

**(1 mark)**

.....

3. Study the diagram of the organism shown below then answer the questions that follow.



- (a) State the phylum to which the organism belongs. **(1 mark)**

.....

- (b) With reasons state the class to which the organism belongs.

Class ..... **(1 mark)**

Reasons .....

.....

.....

**(3 marks)**

- (c) Name **two** human diseases of which the organism is a vector. **(2 marks)**

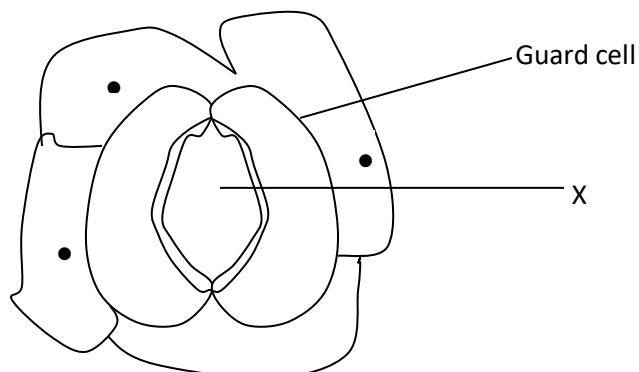
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- (d) What type of metamorphosis does the organism show? **(1 mark)**

.....

4. The epidermis of a leaf is adapted to have the specialized cells known as the guard cell such as shown below.





.....

5. The human ear has the following structures; (i) Auditory meatus  
(ii) ear drum (iii) eustachian tube (iv) ear ossicles and (v) cochlea.

(a) Name **two** functions of the mammalian ear. **(2 marks)**

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.....  
.....  
.....

(b) For each of the structures above, state its function. **(5 marks)**

(i) Auditory meatus

.....  
.....

(ii) Eardrum

.....  
.....

(iii) Eustachian tube

.....  
.....

(iv) Ear ossicles

.....  
.....

(v) Cochlea

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.....

(c) Name a defect caused by damage of the cochlea. **(1mark)**

.....

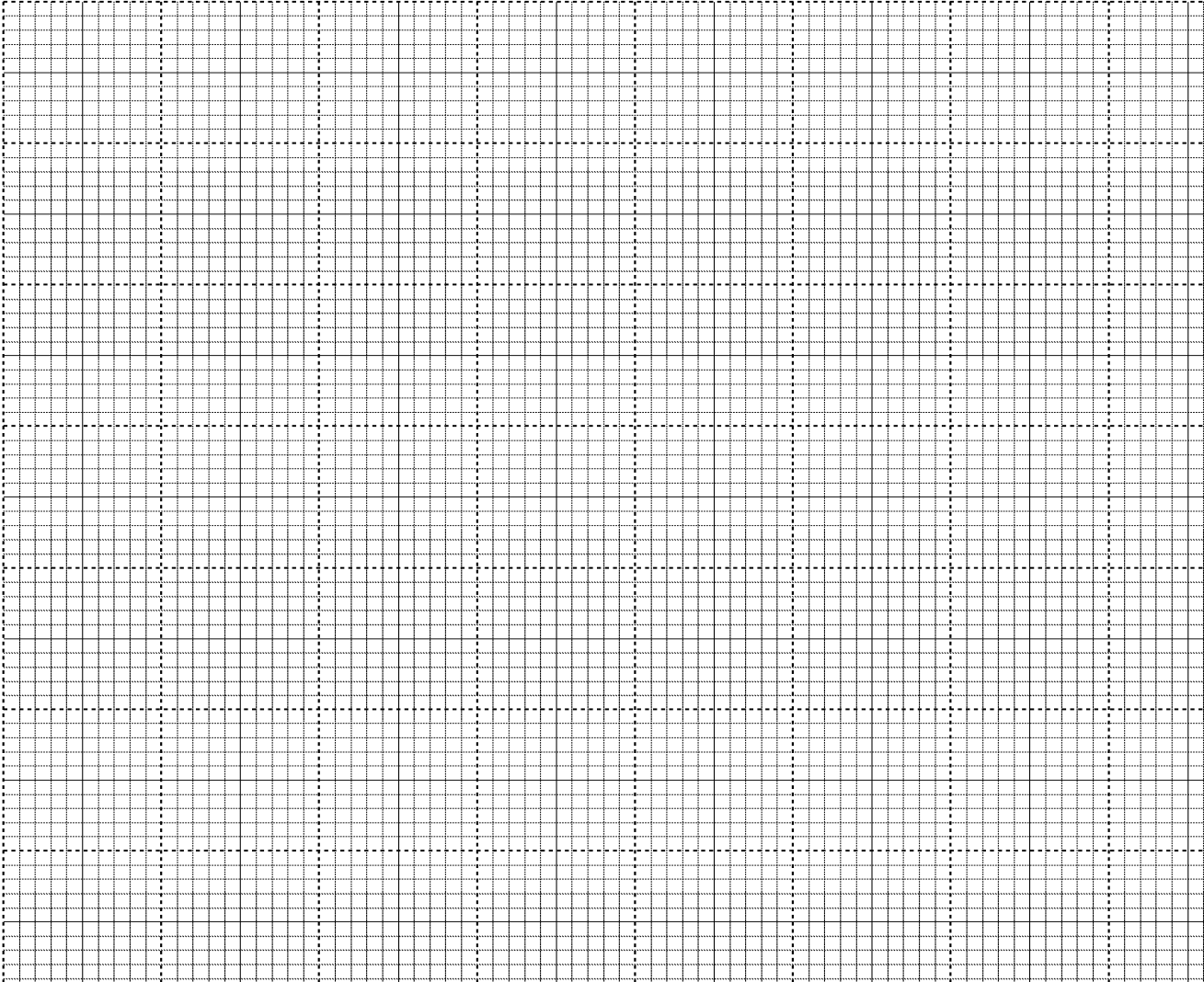
**SECTION B:**

**Answer question 6 (compulsory) and either question 7 or 8 in the spaces provided.**

6. A physiologist working to determine the amount of glucose levels in the iliac artery and hepatic vein per hour after a heavy carbohydrate meal in mg/100ml of blood collected and recorded the following data in a 24 hour period. Study the data and use it to answer the questions that follow.

Amount of glucose in mg/100ml	Iliac artery	2	2	2	2	2	2	2	2	8	12	20	24	20	24	22	28	20
	Hepatic vein	20	22	24	24	24	24	18	12	6	4	2	2	2	2	2	2	2
	Time of day	00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00	11.0	12.0	13.0	14.0	15.0	16.00

- (a) On the same axes plot a line graph to show amount of glucose in mg/100ml of blood against time of the day in a 24hour day up to 4.00 p.m. **(8 marks)**



b) At what time of day was the amount of glucose the same in the iliac artery and iliac vein? **(1 mark)**

.....

(c) Account for the rise in glucose levels in the iliac artery peaks at: **(3 marks)**

(i) 11.00 hrs a.m.

.....

.....

(ii) 14:00 hrs p.m.

.....

.....

(d) Which organ and hormone is responsible for raising the sugar levels in Hepatic vein between 00.00 hrs – 2.00 hrs a.m. **(2 marks)**

Organ .....

Hormone .....

(e) Name the hormone responsible for the fall of glucose and the complex polysaccharide that forms between 14:00 hrs p.m. and 6.00 hrs p.m. **(2 marks)**

Hormone - .....

Complex polysaccharide - .....

(f) Name a disease that would have resulted if the hormone in (e) above failed to be produced. **(2 marks)**

.....

7. (a) Explain the role of the following factors in germination

(i) Oxygen **(2marks)**

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(ii) Water **(3 marks)**

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(iii) Gibberellic acid **(1 mark)**

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