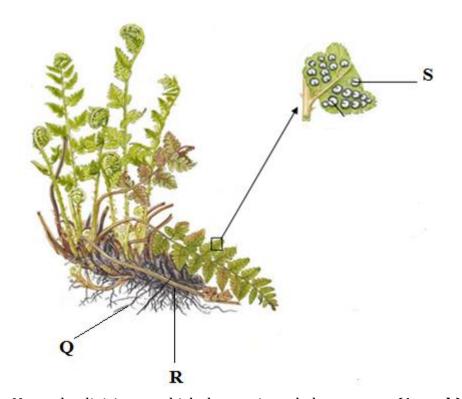
SUNSHINE SECONDARY SCHOOL MOCK 2019 BIOLOGY PAPER 2

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 mar	
(b)	Name and state the functions of the parts labelled Q, R and S.	
	Q	
	Name	
	Function	
	R	
	Name	
	п	

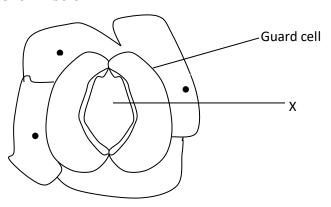
	(d)	Name the molecule that carries genetic information in eukaryotic cells. (1 mark)
	(c)	State the genotypic and phenotypic ratio of the F2 offspring above. (2 marks)
	(b)	Using a punnet square work out the F2 generation. (4 marks)
	as W. (a)	A Red bull and a white cow were crossed and all the offspring were Roan. Give a reason for the appearance of roan cattle in F1 generation. (1 mark)
2.		le the gene for red colour is represented by letter R and that of white colour
	(c)	Name the two body forms of the organism in its alternation of generation. (2 marks)
		Function
		Name
		S

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



(a)	State the phylum to which the organism belongs.	(1mark)
(b)	With reasons state the class to which the organism belongs. Class	(1 mark)
(c)	Name two human diseases of which the organism is a vector.	(2 marks)
(d)	What type of metamorphis 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.



(a)	(i)	Name the structure labelled ${\bf X}$ on the diagram.	(1 mark)								
	(ii)	State three adaptations of the guard cell to its function of closing of stomata in plants.	of opening and (3 marks)								
(b)	The 1	The mammalian lung is known to have adapted the mammal to terrestrial									
		tat by having a pleural membrane.									
	(i)	State two functions of a pleural membrane that gives the advantage over other organisms.	e mammal (2 marks)								
	(ii)	Name two diseases of the respiratory system.	(2 marks)								

(a)	Name	e two functions of the mammalian ear.	(2 marks
(b)	For e	ach of the structures above, state its function.	(5 marks
	(i)	Auditory meatus	
	(ii)	Eardrum	
	(iii)	Eustachian tube	
		Ear ossicles	
	(v)	Cochlea	

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)

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			 - - - - - -	 - - - - -								
b)	↓	at time		vac tha	amai	unt of		o tha	idddin ama in	+ho ili		
υj	and il	iac unit	e of day v	vas tile	aiiiuu	iiit Oi §	ziucos	e the s	aine m	(1	ac artery l mark)	
	anu n	iiac veii	11:							()	ı markj	
											•••••	•••••
(c)	Accou	unt for	the rise i	n glucc	se lev	els in	the ili	ac arte	ery peal	ks at:	(3 mark	s)
	(i)	11 00) hrs a.m.									
	(-)	11.00	, iii o aiiiii									
	(ii)	1 <i>4</i> ·በር) hrs p.m									•••••
	(11)	11.00	, iii o piiii	•								

(d)		h organ and hormone is responsible for raising the stic vein between 00.00 hrs – 2.00 hrs a.m.	sugar levels in (2 marks)
	Orgai	1	
	Horm	ione	
(e)	polys	e the hormone responsible for the fall of glucose and accharide that forms between 14:00 hrs p.m. and 6.	.00 hrs p.m. (2 marks)
		ione	
	_	olex polysaccharide	
(f)		e a disease that would have resulted if the hormone oduced.	in (e) above failed to (2 marks)
(a)	Expla	in the role of the following factors in germination	
	(i)	Oxygen	(2marks)
	(ii)	Water	(3 marks)
			•••••

(b)	(i)	Describe the various modes of adaptation for the flat we blood <i>Schistosoma mansonii</i>	vorm of the (8 marks)

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	(ii)	State the effects of <i>Schistosoma mansonii</i> on its primary		
		human	(12 marks)	
•••••				
•••••				
•••••				
•••••				

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8.	(a)		Describe how the digestion of a protein is achieved in the following portions of the alimentary canal.								
		(i)	Stomach	(4 marks)							
		(ii)	Duodenum	(4 marks)							
	(b)	(i)	Describe the process of absorption at the root hair root.	to the xylem of the (8 marks)							

				•••••	
(i	i) Descril	be how temperat	ure and light ir	ntensity affect th	ne rate of
•		iration.	G	•	(4 marks)
	cransp				(11111111111111111111111111111111111111
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