THE KENYA NATIONAL EXAMINATIONS COUNCIL **Kenya Certificate of Secondary Education**

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BIOLOGY

Paper 1

Nov. 2018 - 2 hours

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Turn over

Answer all the questions in the spaces provided.

(a)	Name the cell organelle found in abundance in the white blood cells.	(1 mark)
(b)	Give a reason for your answer in (a) above.	(1 mark)
		· · · · · · · · · · · · · · · · · · ·
State	e two observable features that place a millipede into its Class.	(2 marks)
•••••		
Whi	ch sets of teeth would be used in chewing sugarcane for maximum extraction	n of sap? (2 marks)
	oup of form two students placed a fresh leaf in warm water. They observed t ed on the surface of the leaf.	hat air bubbles
(a)	What biological process were they investigating?	(1 mark
(b)	Name the structures from which the air bubbles were coming from.	(1 mark
(c)	Explain the distribution of the structures named in (b) above on the leaf s land plant.	surfaces of a (2 marks
		•••••

. Stat	e why it is important	for plants to lose water to the atmosphere.	(3 marks)
	and a decision was as a business.	s to the court of	ar andre gifts with 14 th 17 gifts.
The	diagram below illust	rates tissue fluid and cells surrounding a cap	illary.
n - ming berg			
			8 State three ways in
		Red blood c	ells
		Body cells	
		Tissue fluid	
		Fluid G all courts of angure in consessings.	wolled missignals out 1 3
(i)	Name fluid G.		(1 mark)
			way a see a se
(ii)	Give two ways by	which fluid G is different from tissue fluid.	(2 marks)
	· · · · · · · · · · · · · · · · · · ·		

7.	(a)	Define respiration.	
	(b)	State three activities in the human digestive system that depend on respira	
8.	State	three ways in which blood capillaries are structurally adapted to their funct	
			(3 marks
9.	The d	liagram below represents an organ in a bony fish.	
	(a)	Name the organ.	(1 mar)
	(b)	Describe how air in water reach the capillaries inside structure L.	(3 mark
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(a)	State one homeostatic role of the human skin.	(1 mark)
(b)	Name three structures of the skin essential for its homeostatic function.	(3 marks)
Expla	ain why the nephron is long and convoluted.	(3 marks)
·		77.21 · · · · · · · · · · · · · · · · · · ·
•••••		•••••
	two limitations of using a quadrat to estimate the population of organisms.	(2 marks)



14. The diagram below illustrates a germinating seedling.



	(a)	Name the type of germination illustrated in the diagram.	(1 mark)
	(b)	Describe how the type of germination named in (a) above is brought about.	(3 marks)
15.	Expla	in why a bony fish dies shortly after being removed from water.	(4 marks)
16.	Name	the bones that articulate to form a ball and socket joint at the hip.	(2 marks)
17.	Explai	in the role of carbonic anhydrase in red blood cells.	(3 marks)

	l, light skinned lady with pimples on her face has long hair and limps.	
(a)	List two features which the lady has that are due to inheritance.	(2 marks
		••••••
(b)	Explain why most recessive genes are expressed phenotypically in male off humans.	spring of (3 marks
	7,544	
The d	liagrams below illustrate some forms of beaks in birds.	
	o M N	
	P	
	and all regarded and the second of the second of the second and th	
(a)	Which diagram represents the beak from which the others are likely to have	
(a)	Which diagram represents the beak from which the others are likely to have	
		(1 mark
(a) (b)	Which diagram represents the beak from which the others are likely to have Explain your answer in (a) above.	(1 mark
		(1 mark
		evolved? (1 mark

0.	(a)	Define the term analogous structures.	
	(b)	Give two illustrations of analogous structures in mammals.	(2 marks)
		PO	
.	State	two ways in which plants with weak stems obtain mechanical support.	(2 marks)
		distriction of the second of t	
2.	Wha	t does the term evolution mean?	(1 mark)
3.	State		
		two characteristics of living things illustrated in the photograph below.	(2 marks)
			ed i
l.	Expl	ain why a camel has a longer nephron than a whale.	(3 marks)
		The second secon	
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(a) Name this type of behavioural activity	(1 mark
(b) Explain the significance of this behaviour to the organism.	(3 marks
State two advantages terrestrial animals have in excreting urea as their maproduct.	in nitrogenous waste (2 marks
Delegalis and a second state of the second s	n voniova animala
Below is a graphical representation of how basal metabolic rates compare Anouse	n various animals.
Mouse	n various animals.
Mouse Rabbit Dog Human	n various animals.
Mouse Rabbit Dog Human	n various animals.
Mouse Rabbit Dog Human Elephant	
Mouse Rabbit Dog Human Elephant 0 10 20 30 105 1500 Body mass/	-
Mouse Rabbit Dog Human Elephant	g e elephant.
Mouse Rabbit Dog Human Elephant 0 10 20 30 105 1500 Body mass/	-

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