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553/1 BIOLOGY THEORY 553/1 2 ½ HOURS



ACEITEKA JOINT MOCK EXAMINATIONS 2023 UGANDA CERTIFICATE OF EDUCATION 553/1 BIOLOGY THEORY DURATION: 2 HOURS 30 MINS

INSTRUCTIONS

- Answer all questions in section A and B
- Write the answers to section A in the boxes in the margin of each question
- · Write answers to section B in the spaces provided
- Answer only two questions from section C
- Write the answers to section C on the answer sheets provided.

FOR EXAMINERS USE ONLY

TOTE BIBLINIE BEEF		
SECTION	MARKS	
A		
B 31		
B 32		
В 33		
С		
С		
TOTAL		

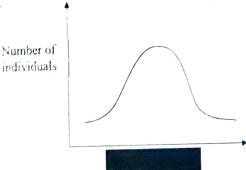
1	B. Mosses C. Ferns D. Forests	
2.	One major characteristic feature present in mesophyll cells but lacking in other p A. Sap vacuole B. Chloroplasts C. Mitochondria D. Cell walls	lant cells is
3.	One major disadvantage of an exoskeleton is that it is A. Impermeable to water B. Impermeable to oxygen C. Rigid, hindering movement D. Rigid, hindering growth	
4.	When amoeba is placed in a hypertonic solution, formation of contractile vacuol A. High rate in order to eliminate excess water B. High rate in order to eliminate excess salts C. Slow rate because there is little water D. Slow rate because there is little salt	es occurs at a
5.	The tape-like structure of a tapeworm is for increasing A. Camouflage B. Rate of reproduction C. Diffusion rate D. Protection from the hose enzymes	
j.	Brightly coloured large petals in tiewers increases the following chances except A. Self pollination B. Insect pollination C. Cross pollination D. Variability	
'.	Which one of the following may not be considered as a contraceptive method? A. Rhythm method B. Abstinence method C. Tubal ligation D. Coitus interuptus	

- One advantage of complete metamorphosis over incomplete metamorphosis in insects is that complete metamorphosis
 - A. Occurs faster
 - B. Occurs slowly
 - C. Involves 4 stages
 - D. Reduces competition
- 9. The figure below shows part of the skin and scales on a fish. The most probable position of the head to the fish is in direction:



- A.
- В.
- C.
- D.
- 10. Which one of the following is the major factor in leaching soil?
 - A. Large number of micro organisms
 - B. High nutrient content
 - C. Large number of macro organisms
 - D. High rainfall

11.



The following characters may give rise to the curve above except

- A. Height in humans
- B. Weight in cattle
- C. Skin colour in humans
- D. Blood groups in humans

12. Genes o A. Dom B. Link C. Rece D. Co-d	ed ssive	ially inherit	ed to	gether because they a	ire
A. Gluce B. Fatty C. Glyce	ose molecules erol molecules erol molecules erol molecules ose molecules	ar	e to s	tarch	
14. Which co	ombination of the following fac	tors will lea	d to l	nigh transpiration rate	e?
i) ii) iii) iv)	High temperature High humidity High atmospheric pressure High wind velocity A. i, ii, iii, iv B. v, vi, vii, viii C. i, ii, iii, iv D. i, iv, vii, viii E. ii, iii, iv, v	\	() (i) (ii) (iii)	Low temperature Low humidity Low atmospheric p Low wind velocity	ressure
grou; A. A an: B. B and C. O and D. AB an 15. The maj A. Fast C B. Redu C. Prote	HAB HAB	of arteries is		e respective donor an	nd recipient are of blood

14. The costant payrests under investigation in the figure below is that ensymes at	r)
Clas bubble	÷4
Water triple only 8 0 Hodrogen	peroxide
A Proton in nature B. Specific C. Affected by pH D. Denatured by heat	
 When Milnosa puchea is touched, its leaves—fold, this response belongs to same A. Growth of plant shoots towards light B. Opening of flowers of some plants in the morning C. Fuglena swimming towards light D. Plant shoot growth away from the pull of gravity 	group as
 Which one of the following is a major reason for lack of special exerctory organ. A. Plants do not exercte B. Plants do not use proteins C. Plants deposit some exerctory products in organs which are later shed off D. Plants do not take in oxygen during respiration 	
 20. Which one of the following sets of hormonal deficiency lead to excessive loss A. Insulin and ADH B. Oestrogen and Insulin C. Thyroxine and ADH D. Oxytocin and insulin 	of water from the body
21. Fusion of some bones in birds, skeletons is for A. Reduction in weight B. Streamlining the body. C. Formation of a rigid framework. D. Increasing surface area.	
 22. Which one of the following would increase the "green house effect"? A. Planting more trees B. Using solar energy instead of fossil fuels C. Building more industries which use petroleum D. Increased use of hydro-electric power, HEP 	

23. The stage in cell division where synthesis of protoplasm and replication	on of genetic material (a
A. Prophase	provide the start
B. Interphase	
C. Metaphase	
D. Felopahse	The the more of the
of same	
24. Insects are one of the most successful classes of animals because of the	e following except
A. They lay very many eggs	
B. Short life cycle	
C. Many mouth modifications	
D. Intermittent growth	and the same of the same of
- mermann growth	
25. Which one of the following main and the f	
25. Which one of the following pairs constitutes homologous organs A. Wings of a bat and those of insects	
B. Flippers of whole and mose of insects	parementus treini
B. Flippers of whales and wings of a bird	
C. Hands of humans and wings of insects	
D. Wings of insects and fins of a fish	And the second second
26. The figure below shows the scolex of a tapeworm. The part labeled X	is used for
Com Com	
	And the second second second second
Sign	
	3 7 6
B. Feeding	The second second
C. Exerction	
D. Anchorage	
27 Products of Constant	
27. Products of digestion absorbed into the lacteals are transported by the	
A. Blood capillaries	
B. Lymphatic vessels	
C. Veins	
D. Arteries	

28. Th	e figure below shows an inverted	nyramid	
	C	pyranuo	
order? A. Tree, B. Grass C. Grass	A e of the sets below shows the corr Birds, Mites s, Cattle, Ticks s, Antelopes, Lions s, Termites, lizards	ect organisms at trophic levels A, B	and C in their respective
29. The figure	e below shows a Bidens fruit		
	<u></u>		
Part labele A. Coroll B. Calyx C. Style D. Filame			
A. Delicio B. Small C. Large	eaby need: more covering on a coous skin surface area to volume ratio surface area to volume ratio netabolic rate	ld day than a big adult because the	small body has a
	<u>s</u>	ECTION B	
31. An investigation	tigation was carried out into the d after a vigorous exercise. The re	concentration of lactic acid in the esults are summarized below.	e blood of a man before
	Time (minutes)	Concentration of lactic acid (mg/100cm³)	
	-10	9	
	0	14	

15	95
20	₹0
40	35
00	22
80	18

ω,	requessent the above information on a suitable graph. (7 marks)
b)	Where in the human body is lactic acid produced during the exercise? (1 mark)
	i) Describe the graph obvaine.
C)	i) Describe the graph obtaine (7 marks)
	ii) Give reasons for the observed changes in concentration of lactic acid in blood. (3 marks) From 0 to 15 minutes

F10			
	experiment, a measuring cylinder was filled v	with water and then inverte	ed over a delivery tube.
200 an e	experiment, a measuring cylinder was filled v n ³ of exhaled air was bubbled into the measur	ing cylinder. A piece of pl	hosphorus born on a wire
was n	ushed into the exhaled air in the cylinder. Aft	er phosphorous stopping to	o burn, the volume air
	68cm ³ .	•	
		1	Remaining air 168cm3
Measur	_	Final water level	Burning phosphorous in exhaled air
Mout <u>h</u>	level — Water		fron wire
a) 5	State the aim of the above experiment.	(1	l mark)
	i) Calculate the percentage decrease in volume phosphorus.	e of air after the burning of	(2 marks)
•			

11	A splain why the volume of air decreases at the end of the expe	THE COURT OF THE C
		stanting to a substitution of the party of t
		pagagas and an east describe the leading region
	the transfer of the state of th	эмгентан жайын типкесен жайын ж
(1)	Calculate the volume of an that would remain if the same volu	me of atmospheric
	air was used instead of exhaled air.	(3 marks)
	to the configuration of the co	
	1 Newtonia at an improvemental and a company of the	
	As a second contract of the co	
	1 Section Company of the Company of	
Th	ne fign. bol. a share the liver, iteum and related blood vessels.	
Th		

A

(2 marks)

a) Name blood vessels A, B, C and D.

C	of the production of the control of	erinde jihor eri jeringo etgi egiler ilkelik ildi.
	ennunio un sono no como contrato de contra	
b) State the important blood flowi) C to the liver		(4 marks)
,		panta tananajangan
ii) D to the liver		(4 marks)
	SECTION C Answer two questions	
4. In which ways is water important	to living organisms?	(4 marks)
5. a) State the importance of bones in	n a human body	(7 marks)
b) State the difference between an	exoskeleton and Endoskeleton	(4 marks)
c) Describe the process leading to	bending of a human arm.	(4 marks)
6. a) Explain how plants adapt for		(4 morks)
 i) Cross pollination 		(4 marks) (3 marks)
ii) Wind pollination		(3 marks) (4 marks)
b) State the advantages of cross po	ollination.	
 c) State the differences between the humans. 	ne processes leading to fertilization in f	(4 marks)
7. A cross between Red and White fl	owered snap dragon plants produces F	l with Pink flowers
a) Explain the absence of white a	nd red flowered plants in the F1. Fully	show your
	nd red nowered plants in the	(5 1)
working.	enotypic ratios of a cross between F1 p	(/ marks)

END