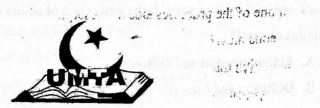
P530/1
Biology
Paper 1
July/August, 2022
2 ½ hours



## UGANDA MUSLIM TEACHERS' ASSOCIATION UMTA JOINT MOCK EXAMINATIONS – 2022

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INDEX NO	SIGNATURE	

# UGANDA ADVANCED CERTIFICATE OF EDUCATION Biology Paper one 2 Hours 30 Minutes

#### INSTRUCTIONS TO CANDIDATES:

- Answer all questions in sections A and B
- Answers to section A must be written as letters in the corresponding columns.
- Answers to section B must be written in the spaces provided

### FOR EXAMINERS USE ONLY

SECTIONS	MARKS
A: 1 – 40	alistony gličnou boolo Kisar kub
<b>B</b> : 41	uzinacha Bil in ilizia anosmali
42	tog Bawai togo tot gritisajo
43	g Pak alt o og foaville e
44	
45	Left to detail and averaged
46	Taken of a shortel nodes.

### **SECTION A**

1.	Which one of the processes aids the absorption of amino acids after eating a heavy
	proteineous meal?
	A. Active transport and diffusion.
	B. Diffusion and osmosis.
	C. Diffusion and pinocytosis.
	D. Active transport only.
2.	Of the following pairs of responses in plants, which one is caused by unequal
	distribution of auxins?
	A. Phototropism and abscission.
•	B. Geòtropism and phototropism.
	C. Photoperiodism and phototropism.
	D. Nastic movement and geotropism.
3.	Which one of the following is true of linked characteristics? They
	A. Are always transmitted as a single block.
	B. Are allelic to one another.
	C. Occur on non-homologous chromosomes.
	D. Can be transmitted independently.
4.	The amount of progesterone in the blood increases steadily from the time of
	ovulation to menstruation, then begins to decline. This is because
	A. Implantation of the zygote occurs.
	B. It is washed out with blood during menstruation.
	C. Luteinising hormone inhibits its production.
	D. Its work of repairing the uterine wall gets complete.
5.	What is the main advantage of the C4 pathway during the process of
	photosynthesis?
	A. Fix carbon dioxide in the carbon cycle.
	B. Concentrate carbon dioxide in the cells of leaves.
	C. Fix carbon dioxide from the atmosphere into the leaves.
	D. Store carbon dioxide in form of organic acids.

U	During Hight in insects, upstroke is brought about by?
	A. Contraction of direct flight muscles.
	B. Relaxation of indirect flight muscles.
	C. Contraction of indirect flight muscles.
	D. Sudden up thrust of the body.
7	The figure below represents an ovule of a flowering plant.
	The strength of the found the present of the supplementation of the
	K was a set separate as a separate set as proper
	A designation of the second se
	The state of the s
	M and the formation of the first companion have been proportionally and the first contraction of
	The boundaries of the second o
	The state of the s
	TO Lame on all some land and and and and and and and and and
	A triploid nucleus is formed by the fusion of a male nucleus with
	A. N and M.
	B. L and M.
	C. K and L.
	D. N and O.
8.	Which one of the following pairs of events occur together to increase the oxygen
	concentration in the air sacs of the lungs?
	A. Contraction of diaphragm muscles and internal intercostal muscles.
	B. Relaxation of diaphragm muscles and internal intercostal muscles.
	C. Contraction of diaphragm muscles and external intercostal muscles.
	D. Relaxation of the diaphragm muscles and external intercostal muscles.
9.	Which one of the following structures are found in both the xylem and phloem
	tissues of higher plants?
	A. Sieved tracheids.
	B. Companion cells.
	B. Companion cells. C. Hollow vessels.

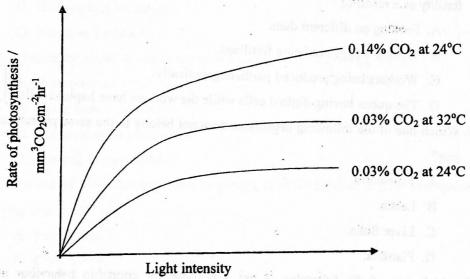
10. The foll	owing are characteristic features of amphibians;
1. 1	Have moist skins.
ij.	Carry out external fertilisation.
'	Use gills at early stages for respiration.
	Use lungs for respiration.
Which	one of the following pairs of characteristics limit them from inhabiting a
totally t	errestrial environment?
Ά.	(ii) and (iii).
В.	(i) and (ii).
C.	(iii) and (iv).
D.	(i) and (iv).
11. What i	s the significance of the vascularisation of the endometrium before
implant	ation in mammals? To
<b>A</b> . 1	Prevent menstruation.
1600일당 보석(HANCE)(HANCE	Ensure firm attachment of the foetus onto the uterine wall.
C	Assist in producing hormones that maintain pregnancy.
<b>D</b> . 1	Facilitate food and oxygen supply to the foetus.
12. The sim	nilarities of the skeletal structures of moles, monkeys and whales lead to the
conclus	ion that, they
<b>A.</b> ]	Belong to the same class.
В. (	Originate from the same environment.
<b>C.</b> 1	Evolved convergingly.
<b>D.</b> 1	Descended from a common ancestor.
13. Dioecio	ous plants are very rare inspite of having the advantage of cross pollination
because	
Α.	Anthers and stigma mature at different times.
В.	The male and female plants are usually apart.
	Half of the individuals do not produce seeds.
<b>D.</b>	Only few agents of dispersal are involved.

1. C. 10. 12

14. Birds have learnt to ignore a scare crow that	is left in the same spot for a long
period of time. This type of behaviour is called.	The state of the s
A. Habituation.	2.9 CX
B. Associative learning.	Manual and a
C. Imprinting.	and respection to gooder 207.
D. Conditioning.	lown, wheel with
15. Which one of the following is an essential featu	ure for successful terrestrial life of
flowering plants?	and for succession terresurar me or
A. Reduction of sporophyte to seeds.	
B. Development of the pollen tube to transfe	er male gamete
C. Possession of well-developed vascular sy	
D. Reduction of the gametophyte to spores.	/ stanzal bana
16. Which one of the following is not true about the	cells of a tissue? They
A. Have physical linkage.	* Cytoplasm
B. Are of the same origin.	Smorth D.
C. Are of the same type.	Constant Constant
D. Have similar function.	there against grow office advice stall?
17. Which one of the following is likely to occur w	then an actively photosynthesising
plant was suddenly removed from light?	A Slave ture
A. No change in the amount of PGAL.	
B. Accumulation of PGAL.	
C. Reduction in PGA.	includes
D. Accumulation of PGA.	s edit at generalish off to the co
18. In guinea pigs, the allele for rough coat (R) is d	ominant over one for smooth coat
(r) and that for black coat (B) is dominant over	one for white coat (b). the alleles
are for coat type and colour are not linked. A	cross between rough black guinea
pig and rough white one produced 28 rough b	lack, 31 rough white, 11 smooth
black and 10 smooth white. Which one of the	he following is likely to be the
genotype of the parents?	and agent of the excitor decounts tend of C

A. RrBb X Rrbb	is and the companies of any or in the proof course
B. RRBB X RRbb	
C. RRBb X Rrbb	
D. RrBB X Rrbb	
19. The mixing of oxygenated blo	ood and deoxygenated blood in the amphibians i
minimised by	and deoxygenated blood in the amphibians i
A. Rapid contraction of the	ventricle
B. Spongy nature of the hear	rt muscles 2 to the later at later at the later at
C. Spiral valve in the truncu	S afteriosus
D. Columnae carnae in the v	entricular wells
20. In which of the following parts	of the chloroplast are water splitting enzymes
mostly located?	of the emoropiast are water splitting enzymes
A. Intergrana.	and the same and the same and the same and the same at the same
B. Cytoplasm.	
C. Stroma.	A contract services
D. Grana.	
21. Which of the following tissues wo	uld be stained deepest red by a dye that contains
nuclei red?	and be stained deepest red by a dye that contains
A. Sieve tube.	Could professional administration to
B. Tracheid.	
C. Collenchyma.	State that the state of the sta
D. Cambium.	
22. Which one of the following is the	correct statement about a neurone membrane
during resting potential?	correct statement about a neurone membrane
A. The inside of the neurone me	mhrana is noosiasta a la sa takat sa takat basa basa e
B. The Na <sup>+</sup> , K <sup>+</sup> , and Cl <sup>+</sup> ions	are evenly distributed on either side of the
membrane.	(1. North 1. 14 North North North 1. North North 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.
C. The concentration of Na <sup>+</sup> ions	if and the second of the second
D. The concentration of K <sup>+</sup> ions i	is greater inside the membrane.
TOURS 1	s greater outside the membrane.

- 23. A cockroach possesses a respiratory system while the earthworm does not possess one because
  - A. Earthworms do not need much oxygen.
  - B. The surface volume ratio of the cockroach is small.
  - C. Earthworms can be parasitic.
  - D. The respiratory system provides shape in a cockroach.
- 24. The cartilaginous fish retain urea in the blood in order to
  - A. Reduce entry of salts into the tissue.
  - B. Avoid loss of excess water by excreting it.
  - C. Avoid dehydration.
  - D. Maintain an internal ionic concentration in balance with the external medium.
- 25. Which one of the following is illustrated in the figure below?



- A. With increase in light intensity, the rate of photosynthesis increases until the temperature becomes a limiting factor.
- B. Rate of photosynthesis increases with an increase in the carbon dioxide concentration.
- C. With increase in light intensity, the rate of photosynthesis increases indefinitely.
- D. Rate of photosynthesis increases with an increase in light intensity until carbon dioxide concentration becomes a limiting factor.

26. Which	one of the following is the ultimate hydrogen acceptor during anaerooic
respirat	tion in animals?
A.	Lactate.
В.	NAD.
C.	Pyruvic acid.
D.	Acetaldehyde.
27. Which	one of the following is the correct shape, in the region of the body of an
	orm where its circular muscles are contracted?
A.	Short and thick.
В.	Long and thin.
<b>c</b> .	Short and thin.
D.	Long and thick.
28. Worke	er bees and the queen bee are polymorphic forms which differ in their
	y as a result of
A.	Feeding on different diets.
В.	Worker's eggs not being fertilised.
C.	Workers being produced parthenogenetically.
D.	The queen having diploid cells while the workers have haploid cells.
29. Which	one of the following organisms does not belong to the same phylum as the
rest?	
A.	Tapeworm.
B.	Leech.
C.	Liver fluke.
	Planaria.
., 30. which	one of the following is not a purpose for courtship behaviour among
anima	ls?
, A.	Ensuring that both partners are sexually mature.
В.	Establishing a pair-bond.
	Ensuring that both partners are ready for mating.
D.	Establishing territories.

1. Which one of the following adaptation	
transpiration?	man and the lotter and the
A. Hairy leaves.	THE TO MEN BY A STREET OF
B. Leaves with thick waxy cuticle.	A Filanting of the Assessment
C. Small sized leaves.	Reported to his week 1.61
D. Succulent stems.	CL. Prayend of eutopein
2. In a multi-enzyme controlled reaction,	wiv according to absent it
Enzyme 1 Enzyme 2	Enzyme 3
$P \longrightarrow Q \longrightarrow$	$\mathbf{R} \longrightarrow \mathbf{V}$
If an excess of V controls the metabolic	pathway of the reaction, the control
mechanism is known as	M. Acid ain
A. Multi-enzyme control.	toolija sehorinessi ()
B. Excess inhibition.	milestropic fl
C. End product inhibition.	38. Which pun of the weatherer appare
D. Negative feedback.	Çhor-L
33. Adaptation by plants to obtain nitrogen incl	lude all the following except
A. Possession of aerial roots.	S. Sacoule
B. Being insectivorous.	
C. Mycorrhiza on plant roots.	Anne afrego and A
D. Bacteria in root nodules:	Three covers of 142, 46, and 20 of
34. Which one of the following refers to group	ps of individuals of at least two species
living together?	kel Attawe
A. Population.	Lik B
B. Community.	and the second s
C. Habitat.	
D. Niche.	strong grimolish of he see sinish as
35. Net productivity in the C4 plants is much h	nigher than that in C <sub>3</sub> plants because
A. C <sub>4</sub> plants have a higher turnover rate	e. Treffiel d'étan rethon des A
B. Energy accumulates at a higher rate	19 10 10 10 10 10 10 10 10 10 10 10 10 10
C. Photophosphorylation occurs in C <sub>3</sub>	plants.
D. The rate of respiration is higher in (	C <sub>3</sub> plants.

36. Which one of the following eco	ological pyramids may be used to determine
productivity in an ecosystem?	
A. Pyramid of energy.	
B. Pyramid of biomass.	in hong of the
C. Pyramid of numbers.	Company of the second s
D. Pyramid of productivity.	position of the Control of the Contr
37. Which one of the following for	ms of environmental hazards is attributed to
application of CFCs?	and the second s
A. Ozone layer depletion.	No come and singless I be sense on the
B. Acid rain.	
C. Greenhouse effect.	Conference assessment of the Conference
D. Eutrophication.	Mank maries hat a
38. Which part of the vestibular appa	ratus responds to the vertical movement of the
head?	Alana wa wana a wa
A. Vestibular canal.	died cagonio misto si ecolo es activissa A.E.
B. Saccule.	A Panestain of grants as among the margin man
C. Utricle.	approximate a second H
D. Semi-circular canal.	otto en Rin ha not politica activi
39. Three counts of 103, 46, and 20 or	f a plant species were made using a quadrant of
25cm <sup>2</sup> . The density of the plant per	r m² is
A. 169.	Constraint action
B. 56.3.	politics of A
C. 225.	attransion 1 K
D. 676.	Control of the Contro
40. Which one of the following coup	les is likely to produce a foetus suffering from
fatal erythroblastosis?	Ad frame at asserting 13 and the enterior of the fact that
A. Rh+ mother and Rh- father.	
B. Rh mother and Rh father.	and the second s
C. Rh+ mother and Rh+ father.	the state of the s
D. Rh mother and Rh father	G. 200 Block to stemp revelopment that I do

### **SECTION B**

41. a) Wha	at do you understand by the term apical dominance?	(02 marks)
••••••		
*********		
	the causes of each of the following:	••••••
i.	Seed dormancy.	(02 marks)
ii.	Apical dominance.	(02 marks)
		Service Control
c) What i	is the ecological importance of	
I.	Seed dormancy.	(02 marks)
II. A	Apical dominance.	(02 marks)
	•••••	

42. a) What	is meant by the term environmental resistance?	(02 marks)
140,000		La law W ya Tar
••••••		1 7 A. 185 . 1 . 6 8
b) Outli	ne the factors:	
	Affecting biotic potential.	(04 marks)
엄마, 사람이 있는데 이렇게 보고 있었습니다. 이 그리고 있는데 없다.	machine to the district of the second	
(when 10)	V The results	
	Jindering hiotic potential	
ii.	Hindering biotic potential.	
i programa	appeal of to day	
43. a) Wha	t is meant by water stress in relation to plants?	(01 mark)
b) Wha	t is the effect of water stress in green plants?	(04 marks)
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
		••••••
property, said a	essuet bre	

c) Outline the structural adaptations of the	kylem vessel for long distance transport
of water and mineral salts.	(05 marks)
the state of the same of the built is the same of	was to a lateral and the second of the
44. The figure below shows oxygen dissociation	n curves for a tadpole blood and that of
an adult toad. Study it carefully and t	
questions:	
Percentage saturation	Tadpole  Adult tode
Partial pressure of	of the state of the state and the state of the state of
	e curves for the tadpole blood and that
of the adult toad.	(03 marks)
Control of the contro	
and the same of th	
그렇게 다고하다 없다. 그렇다 보고 들어가는 물에 제어 생각을 하지 않는데 살아가 없다.	A SECTION OF THE PROPERTY OF T

NO BEE	<b>b</b> )	what advantage is the position of the dissociation curve	e for the tadpore in
i i i sag		its environment?	(04 marks)
		***************************************	a B. Chen Es
	(۵	How is the skin of the adult toad adapted for gaseous ex	xchange?
	٠,	110W IS the skill of the adult total adapted for gaseous of	(03 marks)
			(00,
14 (April )			
ui est		A CA AMERICAN AND DESCRIPTION OF A PRODUCT OF A PRODUCT OF	Mat. Agran da
			Control State
		were originally classified under kingdom plantae.	
a)	Outl	ine the characteristic features that made it necessary for	
		eir own kingdom.	(03 marks)
			MANA MENINGER
		200 J 37 A	
b)	Ехр	lain why fungi are wide spread and in vast numbers.	(04 marks)
	HALITE ST	t an diagn ash, the sending spit is a reference mention and dist	
		Australia de la pro-	916
	•••••		
	••••	••••••	

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		••••				
hree healthy, unrelated	species of	f flowerin	g plants	A, B and	C were	subjec
range of different ligh						
ne table below:	1304					
	10.1	in the state of the	Trea	tments	rejus to be	2 (4)
						1
	1	2	3	4	5	6
Hours of light	15	14	13	12	11	10
		10	11	12	13	14
Hours of darkness	9	. 10	111	12	13	17
Species: A	+	+	+	+		1
В		_	•		+	+
C	+	+	+	+	+	+
	108			`\T- (I		
KEY: + Means flower				No flov		
) State the photoperic			which ea	ch speci	es belon	igs and
reasons to support ye	our answe	r.				(03 n
(i) A						
				· • • • • • • • • • • • • • • • • • • •		
(ii) B						
(ii) B						

<b>b</b> )	Descr	ribe how the phytochrome controls flowering	g response	exhibited in
		es A and B.		(04 marks)
	(i)	Species		
		A		
	(ii)	Species		
		, <b>B</b>		
c)		would be the likely effect of flashing light during mens?	ng darkness	on each of the (03 marks
	specification (i)	A		
2	(ii)	В		etaso (
	(iii)	C		91

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