RHS

Excluding examiner comments



R2101

PLANT CLASSIFICATION, STRUCTURE & FUNCTION

Level 2

Monday 5 February 2024

09:00 - 10:20

Written Examination

Candidate Number:	
Candidate Name:	
Centre Name:	

IMPORTANT – Please read carefully before commencing:

- i) The duration of this paper is **80** minutes;
- ii) **ALL** guestions should be attempted:
- iii) **EACH** question carries **10 marks**;
- iv) Write your answers legibly in the spaces provided. It is **NOT** necessary that all lined space is used in answering the questions;
- v) Use **METRIC** measurements only;
- vi) Use black or blue ink only. Pencil can be used for drawing purposes only. Ensure that all diagrams are labelled accurately with the line touching the named object;
- vii) Where plant names are required, they should include genus, species and where appropriate, cultivar;
- viii) Where a question requires a specific number of answers; only the first answers given that meet the question requirement will be accepted, regardless of the number of answers offered;
- ix) Please note, when the word 'distinct' is used within a question, it means that the items have different characteristics or features.

Ofqual Unit Code K/505/2967

Please turn over/.....

ANSWER ALL QUESTIONS

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IVI	А	ĸ	n	

Q1 a) State what is meant by **EACH** of the following terms giving **TWO** distinct **NAMED** plant examples for **EACH**, by completing the table below:

	Genus	Species	
Meaning of			
term			
			4
Plant example 1			
•			2
Plant example 2			
			2
State the meanir	ng of the term cultivar giving C	ONE NAMED plant example.	2
			Total Mark
		Please see over/	

b)

b) Describe ONE function for EACH of the following root features: i) root hair ii) apical meristem iii) endodermis iv) root cap i)	Q2 a)	State ON	IE difference between a tap root and a fibrous root.	MARKS 2
i) root hair ii) apical meristem iii) endodermis iv) root cap i)				
i) root hair ii) apical meristem iii) endodermis iv) root cap i)				
ii) apical meristem iii) endodermis iv) root cap i)	b)	Describe	ONE function for EACH of the following root features:	
ii)		ii) iii)	apical meristem endodermis	2 2
iii) iii)		i)		
iii) iii)				
iii) iii)				
iii) iii)		ii)		
iii)				
iv)				
iV)				
iv)				
Place turn over/				
Place turn over/				
Please turn over/		iv)		
Please turn over/				
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I Total Mark				Total Mark

Q3 a)	Name the part of the flower from which the fruit develops.
b)	Describe the dispersal of the mechanism for EACH of the fruits shown below
	giving ONE plant example for EACH. Fruit X
	Description of method of dispersal
	Plant example

MARKS 1

9

Question continues on the opposite page

contd.	MARKS
Fruit Y	
Description of method of dispersal	
Plant example	
Fruit Z	
Description of method of dispersal	
Plant example	
	Total Mark
Please turn over	

		MARKS
Q4 a)	State the difference between juvenile and adult growth in the plant life cycle.	2
b)	Describe TWO benefits of juvenile growth in a horticultural situation.	4
c)	Describe TWO benefits of adult growth in a horticultural situation.	4
		Total Mark

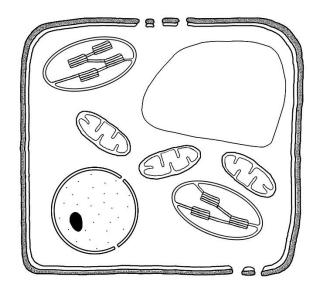
Please see over.....

Q5 a) Label the following cell components in the diagram below:

MARKS 5

- i) cell membrane
- ii) nucleus
- iii) cell wall
- iv) mitochondrion
- v) vacuole

Diagram of a plant cell



b)	State ONE function for EACH of the cell components listed in a) above.	5
	i)	
	ii)	
	iii)	
	.iv)	
	v)	Total Mark

)	State SIX distinct features of a flower which adapt it for bee pollination.	N
	Name TWO plant examples of a bee pollinated flower.	
	Name TWO plant examples of a bee pollinated flower.	
	Name TWO plant examples of a bee pollinated flower.	
	Name TWO plant examples of a bee pollinated flower. Fertilisation often follows pollination. State what is meant by the term fertilisation.	
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	Fertilisation often follows pollination. State what is meant by the term fertilisation.	Total

Please see over.....

Q7 a)) Describe the movement of water in the plant under EACH of the following headings:		
	i) ii)	uptake by root hair cells loss from leaves to the air	4 6
	i)		
	ii)		
			Total Mark
		Please turn over/	

part	Function	
Ì		
Anther		
Petal		
Ovule		
Stigma		
State what is	meant by the following terms:	
,	orolla alyx	1
,		
i)		
ii)		
State TWO di	ifferences between monocotyledonous and dicotyledonous flo	
State TWO di	ifferences between monocotyledonous and dicotyledonous flower table below:	wers by
State TWO di completing th	ifferences between monocotyledonous and dicotyledonous flower below: Monocotyledonous flower Dicotyledonous flower Dico	wers by
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State TWO di completing th	ifferences between monocotyledonous and dicotyledonous flow table below: Monocotyledonous flower Dicotyledonous flow 1	wers by 2

Q8 a) State **ONE** function for **EACH** of the flower parts by completing the table below:

MARKS

Q9 a)	State wh	at is meant by EACH of the following terms:	MARKS
	i) ii) iii) iv)	leaf petiole leaf lamina leaf vein leaf midrib	1 1 1
	i)		
	•		
	iv)		
b)	State wh	ere EACH of the following tissues are found in a dicotyledonous leaf:	
,	i) ii)	epidermis phloem	1 1
	i)		
c)	State TW leaf.	O characteristics and TWO functions of the epidermis in a dicotyledonous	4
			Total Mark
		Please turn over	

) Descri	ibe how the following environmental factors affect the rate of photosynthesis:	
) Descii	be now the following environmental factors affect the fate of photosynthesis.	
i) ii)	light quality	
ii)	carbon dioxide	
i)		
		• • •
ii)		
	ibe THREE ways in which growers can optimise the conditions for synthesis in a glasshouse.	
photos		
photos	synthesis in a glasshouse.	
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