

WAKISSHA JOINT MOCK EXAMINATIONS MARKING GUIDE

Uganda Certificate of Education
BIOLOGY PRACTICAL 553/2
July/August 2023



O. J. R

Reject: floss
Accept: froth

1. (a)

TEXTURE	OBSERVATION	DEDICATIONS
A1	Slow/moderate/ slow bubbling/moderate effervescence;	Slow/moderate breakdown/ decomposition of Q;
A2	Moderate/ many bubbles of gas/ rapid effervescence;	Moderate/fast breakdown/decomposition of solution Q;
A3	Many/ very many gas bubbles/ rapid/ very rapid effervescence;	Faster/ fast breakdown/ Decomposition of solution Q;
A4	No bubbles of gas/ no effervescence;	No breakdown/ no decomposition of solution Q;
A5	Very few/ few bobbles/ very slow/ slow effervescence;	Very slow/ slow breakdown/ decomposition of solution Q;

hydrolysis (02)

(02)

(02)

(02)

(02)

(b) (i)

A1 and A2

Few / moderate bubbling in A1 because the whole cube has a small surface area; hence few enzyme molecules were exposed to solution Q; whereas there was many bubbles of gas in A2 because cutting the cube into four pieces increased surface area; exposing more enzyme molecules to solution Q;

Reject: zero bubbles in A4

Reject: H_2O_2 (hydrogen peroxide)
Accept: H_2O_2 in solution Q

(ii)

A3 and A4.

There was many/ very many bubbles of gas in A3 because cutting the cube into eight pieces greatly increased the surface area; therefore were exposed to solution Q;

Whereas there was no bubbling in A4 because boiling the pieces of the cube, denatured the enzyme, molecules;

of favorable temperature (02)

(iii)

A3 and A5

Very many bubbles in A3 because cutting the cube into eight pieces greatly increased the surface area, exposing many enzyme molecules to solution, whereas very few bubbles in A5 because specimen B has a low concentration of enzyme/ active substance; which catalyses the breakdown / decomposition of solution Q;

Very many/ rapid / many bubbles in A3 due to high concentration of enzymes; this rapidly catalyze the breakdown of Q (02)

in A5, the low few bubbles b/c of low concentration of enzymes; which slowly catalyze decomposition of Q. Effect

(c)

Effect of surface area on enzyme activity;
Effect of boiling / excessive heat / very high temperature on enzyme activity;
Effect of enzyme concentration on enzyme activity;

(02)

(02)

Reject: when an enzyme is mentioned.

- (d) Role of specimen A and B is to provide the enzyme / active substance;
Or
A and B are the sources of the enzyme / active substance;

TOTAL 20 MARKS

2.

- (a) - Vertebrae;
Reasons

- Have neural spines;
- Have neural canals;
- Have natural arches;
- Have transverse processes;

Rej: Vertebra

L - Lumbar vertebrae
K - Cervical vertebrae (01)

Acc: Vertebra bones
Acc: Cervical vertebra and lumbar vertebra

(Any 03)

(b)

Specimen	Part of the body	Reasons	
K	Acc: Cervical region Neck/neck region; Rej: Cervix Cervix	Has vertebrarterial canals; Has divided transverse processes	(02) Any 1
L	Abdominal region/ Lumbar region; Also Acc: Abdomen	Has long transverse processes; Has a thick centrum; Has a broad neural spine the large developed neuropophysis/anapophysis/hypophysis.	(02) Any 1

- (c) - Has long, curved, transverse processes;
- Has a short, broad, neural spine;
- Has a thick centrum;
- Has a narrow neural canal;
- Has extra processes;

Rej: if the complex words are misspelt
Any 03
(Any 03)

- (d) Specimen K - neck arch & head; and Specimen L

• Short transverse processes	• Long transverse processes
• Has vertebrarterial canals (Cervical ribs)	• No vertebrarterial canals
• Divided transverse processes	• Transverse processes not divided
• Thin centrum	• Thick centrum
• Wide neural canal	• Narrow neural canal
• Transverse processes straight	• Transverse processes curved

- (e) Drawing of the anterior view of specimen L

Any 3 = (03 marks)

T - 01

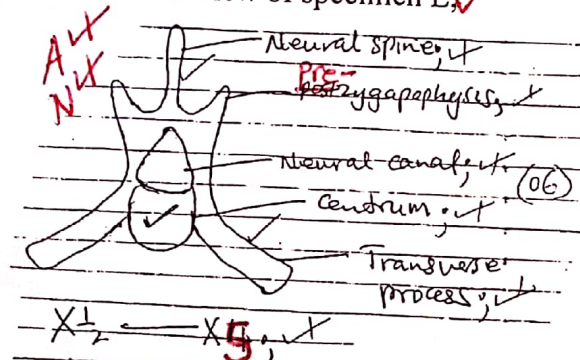
D - 02

L - 02

M - 01

A - 0 1/2

N - 0 1/2



Acc: Magnification = 1-5
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20 marks

3.

(a) Identify of R: Stem;

Acet. Rhizome

(01 mark)

Observation features

- Has scale leaves;
- Has nodes and internodes;
- Has buds;
- Has adventitious roots;

Any 2 = (02 marks)

Identity of S: Bulb;

01 mark

Observation features

- Has thick fleshy leaves,
- Has a short stem with Adventitious roots;
- Scale leaves

Any 2 = (02 marks)

(b) Class monocotyledoneal; *Liliopsida*

(01 mark)

Reasons

- Leaves have parallel venation;
- Has fibrous root system;

Reject: Adventitious roots

(c) - Thin; dry; Parallel veined; scale leaves

- Thick; fleshy; succulent; Parallel veined; fleshy leaves

fleshy leaves fleshy leaves numerous leaves

Any 03 = (03 marks)

(d) - R has buds for vegetative propagation;

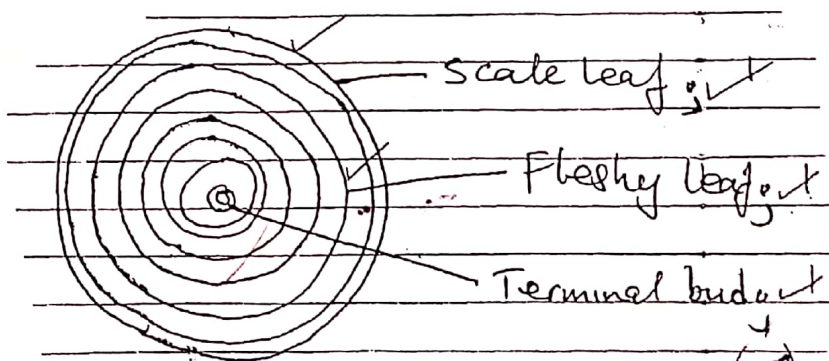
- Has adventitious roots for absorption of nutrients/water and mineral salts / for anchorage;

- It is thick / swollen for storage of food;

*Accept: scale leaf
Reject: scaly leaf*

Any 2 = (02 marks)

(e) Drawing of a transverse section of specimen S;



T - 01

D - 02

L - 01

M - 01

A - 0 1/2

N - 0 1/2

X1 - X4

(05)

Drawing points

- Scale leaf must be thin with continuous outline.
- Fleshy leaf

Acet: magnification = 0.5 - 4

20 marks

END