

## **FORM FOUR**

### **TERM 2 2025**

#### **BIOLOGY PAPER 3 MARKING SCHEME**

Q.1.

Test Tube	Test	Observation	Inference
1	Iodine	Brown colour of iodine retained	Absence of Starch
	Benedict	Benedict change to yellow/brown	Presence of reducing sugar
2	Iodine	Brown iodine change to blue black	Presence of starch
	Benedict	Blue colour of Benedict solution retained	Absence of reducing sugar
3	Iodine	Iodine changes to blue-black	Presence of starch
	Benedict	Blue colour retained No observable colour change	Absence of reducing sugars

b) Enzyme amylase/amylase/enzyme diastase/diastase.

Any correct = 1mk

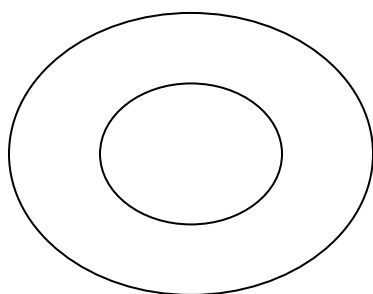
c) i) presence of reducing sugars and starch absent; 37<sup>0</sup>c water bath provided optimum temperatures for enzyme amylase/diastase/enzyme to convert starch to reducing sugars/maltose  
2mks

ii) Presence of starch and absence of reducing sugars; 50<sup>0</sup>c water bath raised the temperatures beyond optimum hence denatured the enzyme/enzyme amylase/enzyme diastase.

d) Control experiment

Reject; experiment control/controller/controlled experiment

Q.2. a)



- b) - Collenchyma  
 - Xylem  
 - Parenchyma cells( of pith and cortex) (2 mks)

c) (3 mks)

Stem	Root
<ul style="list-style-type: none"> <li>- Vascular bundle arranged in rings</li> <li>- Pith present</li> <li>- No root hairs</li> </ul>	<ul style="list-style-type: none"> <li>- Phloem between radial arms of xylem (star shaped)</li> <li>- No pith</li> <li>- Root hairs present</li> </ul>

- d) i) To allow light penetration  
 ii) To keep the cells turgid  
 iii) To make tissues clearly visible.

3. 1a) Identify	Steps followed
A Argasidae;	1b,3b,5b;
B Formicidae;	1b,3a,4a;
C Spirostreptidae;	1b,3b,5a,6b,7b;
D Lithobiidae;	1b,3b,5a,6b,7a;
E Muscidae;	1a,2a;
H Cambaridae;	1b,3b,5a,6a;

Rej: If family names start in small letters  
 Everything if steps and identify interchanged.

Identify if steps are wrong

b. Arthropoda; rej: wrong spelling but mark part © if wrong phylum given or left blank,  
reject part ©

c. Jointed appendages/limbs/legs

Have segmented bodies

rej: Have an exoskeleton

