TERM 2 - 2023

BIOLOGY – PAPER THREE (231/3)

FORM FOUR (4)

MARKING SCHEME

1. Place a drop of the contents from each test tubes; **1,2** and **3** on a white tile to each drop add iodine solution. Record your results in the table below. (3marks)

Test - tube	Observation at experiment	Observation at end of experiment
1	Blue black;	Blue black;
2	Blue black;	Brown/ retaincolour iodine/ traces of blue black;
3	Blue black;	Colour of iodine/ brown/ traces of blue black

(a) Place the test tubes in water bath maintained at **37°C**. Allow to stand for 30 minutes. Place a drop of contents from each test tube on a white tile. To each drop add iodine solution.

Record your observations in the table. **(3marks)**

(b)

Test tube 2 **(1 mark)**
- green/ yellow;

Test tube 3 **(1 mark)**
- orange/brown;

(c) - control experiment; **(1 mark)**

(d) in test tube 1, starch was not converted to simple/ reducing sugar due to lack of NaCl and solution L/ enzyme;
- in test tube 2, starch was changed/ hydrolysed into simple sugars due to lower NaCl concentration; NaCl accelerates hydrolysis of starch/ NaCl is a co-factor in the hydrolysis of starch; **(7 marks)**

(e) - enzyme diastase/amylase/ptyalin; **(1 mark)**

(f)- most suitable temperature/ optimum temp. for enzyme activity; **(2marks)**

2.

(a) (i) epigeal; **(1 mark)**

(ii) The cotyledons are pulled/ thrust above the soil surface; **(1mark)**

(b) – J – first foliage leaves; **(4 marks)**

- L – stem;
- M – Testa;
- N – Radicle; rej radical.

(c) – protect delicate foliage leaves from mechanical damage during germination; - carry out photosynthesis in the first two days of germination before 1st foliage leaves are formed; Provide stored food for germination;(2 marks)

(d) – hypocotyl;

(e) (i) Dicotyledonae;

(ii) has two cotyledons;

3.(a) X. saprophytism;

Y. symbiosis;

Z. predation;

(b) (i) Fungi;

Lack chlorophyll/ green colouring matter;

(ii) Mammalia;

They have fur; Mammary gland;

Homodont dentition;

(c)

X. Breakdown of organic matter to reusable forms for plants/ recycling nutrients;

Cleans the environment by removing organic waste;

Z. Regulation of the prey population;

(d) (i) Leguminous plants;

(ii) Fixation of Nitrogen to usable/ available form to the plants;