

BIOLOGY
PAPER 3
MARKING SCHEME

Cylinder	Length in cm	texture
Liquid s ₁	5.1-5.2	(very hard /stiff/firm
Liquid s ₂	4.9-4.8	Soft /flabby/flexible

ii) S₁ has lower concentration /lower osmotic pressure /hypotonic /more dilute than the cell sap of potato cells; water enters the potato cell by osmosis making the cells turgid /increasing the size of cells;

S₂ has higher concentration / higher osmotic pressure /hypertonic than cell sap of potato cells;water is lost from the cell by osmosis making them flaccid /decreasing the size of cels.l **(4marks)**

b i) Test tube A ; less foam /bubbles /froth formed /slow effervescence /fizzing /frothing;
Test tube B: more foam /bubbles /froth firmied //rapid effervescence /fizzing /frothing;
Test tube C: little /small bubbles formed; **3marks**

ii) Hydrogen Peroxide $\xrightarrow{\text{catalase}}$ water +oxygen

1mark

iii) **Test tube A**

The potato pieces provide a smaller surface area for enzyme action

Test tube B

The crushed potato cylinder provides a larger surface area for enzyme action

Test tube C

Dilute hydrochloric Acid alters /lowers the ph making it less favourable /suitable for enzyme catalase activity **(6marks)**

2. a) K - pteridophyta; rej wrong spelling
Reason - presence of sori
- Leaf modified to a frond

L - Bryophyta

Reason - presence of capsules

- Presence of seta
- Presence of rhizoids

(4marks)

b) Gymnospermatphyta;rej Gymnospermae
Reasons -presence of cones (male and female
-palm - like leaves

2marks

c) P –sorus; rej sori

U- Archegonium; rej Archegonia

V-male cone; (s)

Y- Seta.

4marks

d) T –produce male gametes; sperms /antherozoids

1mark

why D –grows in wet areas to provide moisture for antherozoids to swim to archegonia (to cause fertilisation)

1mark

3. a) L-Mammalia rej wrong spelling **1mark**

Reason; has fur

Has earlobes /pinnae Acc earlobe/pinna(any one correct)

K -Aves rej wrong spelling **1mark**

Reasons; - body covered by feathers

- Has a beak
- Has scaly hind legs /limbs

- Fore limbs modified into wings (any one correct) 1 mark

- b. i) E-Dorsal fin
 F-Operculum
 G-Pectoral fin 3marks

-spelling must be correct

Answers must be on photograph to award

- ii) H/scales
 - Overlap backwards to reduce resistance to water during swimming
 - Prevent water from getting into the body

(2marks)

c. i) Tail power = $\frac{\text{length of tail tip to anus}}{\text{Length from tail tip to mouth}} \times 100$
 $\frac{3.1\text{cm}}{8.4\text{cm}} \times 100 = 36.9\% = 37\%$

- ii) Large to provide enough force for forward thrust /propulsion;

