BIOLOGY

PAPER 3

MARKING SCHEME

|  |  |  |
| --- | --- | --- |
| Cylinder | Length in cm | texture |
| Liquid s1 | 5.1-5.2 | (very hard /stiff/firm |
| Liquid s2 | 4.9-4.8 | Soft /flabby/flexible |

ii) S1 has lower concerntration /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 firmed //rapid effervescence /fizzing /frothing;

Test tube C: little /small bubbles formed; ***3marks***

ii) Hydrogen catalase water +oxygen

Peroxide  ***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) 1mark

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 = length of tail tip to anus x 100

Length from tail tip to mouth

3.1cm x 100 =36.9% =37%

8.4cm

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