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;