Term 2 - 2022

BIOLOGY

(MARKING SCHEME PAPER III)

FORM FOUR

TIME: 1 ¾ HOURS

Name: …………………………………………………………. Adm No: ……………….

School: ……………………………………………………….. Class: …………………..

Signature: …………………………………………………….. Date: ……………………

1. a) i) Visking tubing swells/ becomes turgid; (1X1 = 1mk)

ii) High concentration of water molecules in the beaker/ distilled water compared to the visking

tubing/ solution K;Water molecules move by osmosis from beaker into visking tubing;

(1X2 = 2mks)

|  |  |  |  |
| --- | --- | --- | --- |
| **I VISKING TUBING**  **TEST** | **PROCEDURE** | **OBSERVATIONS** | **CONCLUTION** |
| STARCH | Put food sample in test tube add iodine solution ; | Dark blue/ Blue black/ Black; | Starch present; |
| REDUCING SUGAR | Put food sample in a test tube add ( equal amount of Benedict’s solution heat / warm / heat in a water bath | For blue, green, yellow/orange/red; | Reducing sugar present; |
| **II BEAKER** | | | |
| STARCH | Put food sample in a test tube add iodine solution ; | Remain yellow brown; | Starch absent; |
| REDUCING SUGAR | Put food sample in a test tube add (equal amount solution heat / warm/ heat in a water bath; | Mixture turns from blue, green, yellow/ orange/red; | Reducing sugar present; |

(d) Starch has large molecular sizes; which cannot pass through the semi-permeable visking tubing into the beaker; glucose has small molecular sizes which can diffuse across the semi-permeable visking tubing into the beaker;

2. (a) Circulatory system;

Respiratory system;

(b)

P Pericardium membrane;

Z Pleural membrane;

(c) by ribs; / deposits of fats to absorb shock;

(d) Rings of cartilage to keep it open

Ciliated epithelium to waft trapped solid particles back to the throat;

Has goblet cells to secrete mucus to trap dust;

(e) Left atrium;/ Left auricle

(f) L Has more oxygen less CO2; M has less oxygen;/ more carbon IVoxide

(g) has hair and mucus to trap solid particles; / warmth to incoming air; /

3. a) Magnification – 1mk.

Each correct label-½ mk.

Correct drawing (1mk)

b) Class: Dicotyledonae;(1mk)

Reason: Has two cotyledons Accept has network veins /has at a tap root system. (1mk)

c)

|  |  |
| --- | --- |
| **Structure in S1** | **Structure in S2** |
| Plumule  Radicle  Cotyledon | Stem system /shoot  Root system;  Seed leaf |

3mks

d.i) S1 – Epigeal (1mk)

ii) S3 – Hypogeal (1mk)

d.ii) The cotyledon remain below the surface of the soil. (2mks) the epicotyl elongates

iii) The cotyledon thrust above the surface of the soil; the hypocotyl elongates;