**MARKING SCHEME**

**BIOLOGY PAPER 3 (231/3)**

1. a) i)

|  |  |  |
| --- | --- | --- |
| Experiment set up | Solution X inside the tubing | Iodine solution outside the tubing |
| Beginning of the experiment | White/cream**√1**. Rej. Yellow | Colour of iodine retained yellow/brown. Rej Red |
| End of the experiment | Solution turns blue black/ black**√1** | No colour change/ yellow/brown**√1** |

ii) Starch **√1**

iii) semi-permeable**√1**

iv) Iodine (molecules) moved into**√1** starch solution/solution X across the tubing through diffusion; **√1** turning it blue black Starch (molecules) were too large **√1** such that they could not **√1** move across the tubing into iodine solution.

b) i) Diffusion

 ii) - size of diffusing molecules

* Solubility
* Thickness of the tubing/membrane
* Permeabling of medium/ tubing/membrane

(Any two)

2. a) D - longitudinal septum/Septum

 E - Right ventricle

b) Separate the left side form right side of the heart prevent mixing of oxygenated

 and deoxygenated blood. 1mk

c) ***C*** is more muscular than ***E***

***C*** pumps blood to the rest of the body which is a longer; than the neighbouring lungs to which E pumps blood;

 d) i) Prevent back flow of blood ventricles contract. 1mk

ii) Holds the valve flaps into position to prevent the valve from turning inside out when ventricles contract/during systole.

e) a) i) Left atrium/ auricle 1mk

 ii) E - is a pumping chamber; and needs more layers of muscles to pump blood

 out of the heart.

 G - is a receiving chamber and pumps blood down the gravity towards E;

 hence only less pressure.. any 3 = 3mks

 b) i) Aorta 1mk

 ii) Varicose veins; Arteriosclerosis; Coronary thrombosis 2mks

 iii) Hypertension

 ( any first two only)

 NOTE: Spellings of technical terms **must** be correct to score)

3. (i) Etiolation 1mk

 ii) To reach light 1mk

 iii) Negative geotropism (reject phototropism) 1mk

iv) Auxins move, tot he lower surface of the shoot, more auxins on the lower

side cause faster growth/elongation; on this side resulting in curvature of

 the shoot away from gravity /upwards. 3mks

|  |  |
| --- | --- |
| SET A1 | SET A2 |
| Green | Yellow (yellowish is incorrect) |
| Shorter stem/internodes | Taller/longer internodes |
| Thick steams | Thin stems |
| Firm/sturdy plants | Weak/feeble plants |

Set A1 - in light

Set A2 - in darkness