**SUNRISE 2 EXAMINATION**

**SEPTEMBER- 2022**

**BIOLOGY PAPER 3**

**MARKING SCHEME**

1. a)

|  |  |  |  |
| --- | --- | --- | --- |
| Food  substance | Procedure | Observation | Conclusion |
| Starch | Put 1 ml of K add 2 drops of iodine | No observable change | Starch absent |
| Reducing sugar | To 1ml K add equal amount of Benedict solution and boil | No observable colour /change of Benedict retained | Reducing sugar absent |
| Non – reducing sugar | * To 1ml of K add 2 drops of diluted HCL and boil; * Cool and add NaHCO3 until fizzing stops; * Add equal volumes of Benedict solution and boil | Colour changes from blue to green to yellow /brown / orange | Non – reducing sugars present |
| Protein | To 1ml of K add 1ml of NaOH followed by 2 drops of copper sulphate then shake | Colour changes to purple/ violet | Protein present |

**(10mks)**

b) i) Sucrase **(1mk)**

ii) Ileum; accept small intestine

c) Accept any correct adaptation **(2mks)**

1. a) i) tendrils

ii) Thigmotropism;

iii) Touch

iv) Contact causes lateral migration of auxins to the outer side of the stem. Since higher auxin concentration promotes faster growth in shoots, the greater auxin concentration in the outer part causes faster growth than the part in contact with the object hence the shoot continues to coil round the object.

v) Helps the plant to obtain support.

b) i) Insect pollinated;

ii) it is brightly coloured and conspicuous.

1. a) i) A- Medulla;

D- Cortex;

ii) B- Renal artery;

C- Renal vein;

G- Afferent arteriole;

H- Efferent arteriole;

b) i) Glomerular filtrate;

ii) Formed by ultrafiltration; due to wider afferent arteriole and narrower efferent arteriole resulting in high pressure due to resistance in glomerular capillaries; the pressure causes filtration of substances having small molecules into the capsular space;

c) E is longer in a desert animal to conserve water; and shorter in fresh water animal to facilitate elimination of excess water from the body;

d) Aldosterone;