**MWAKICAN**

**FORM 4**

**BIOLOGY PAPER 3**

**MARKING SCHEME**

1(a) Leaf

Reason – Broad leaf blade/lamina

* Presence of leaf
* Mid-rib present
* Veins present

(b) Class – dicotyledonae

Reason – Leaf has network venation

(c) Upper epidermis

Has fewer stomata inorder reduce water loss or to reduce the rate of transpiration. This is because the upper leaf side is exposed to direct sunlight.

Lower epidermis

Has more stomata in order to increase the rate of gaseous exchange as well as reduce the rate of transpiration. This because the lower side of the leaf does not face direct sunlight.

2(a)(i) a - Pericarp

b - Mesocarp

C - Seed

d - hard/stony endocarp

c – fruit stalk

(ii) u – Remains of the calyx

V - placenta

W – seed/ovule

x - funicle

(iii) SI - Central basal

T1 – Marginal

(b) SI – Animal dispersal

Reasons

* Fruit is brightly coloured
* It has a fleshy Mesocarp or is juicy/ a succulent fruit
* It is sweetly scented(NB. Use of prior knowledge since the scent or smell is not observable from a photograph)

T1 Self/Explosive mechanism

Reasons

-Two lines of weakness

-Has sutures along which it dehisces on drying

C) S1 – Drupe

T1 - Legume/pod.

(d) To prevent completition for light, nutrients, and water

-To prevent overcrowding

- It enables the species to colonise new habitats

Q3

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| Food substance | Procedure | Observations | Conclusion |
| Reducing sugars | To 1 ml of solution  P add an equal amount of Benedicts solution,Boil in hot water bath | Colour changed to green,yellow and to orange(brick red) | Reducing sugars present |
| Protein | To 2 cm3 of solution S,add equal amount of 10% sodium hydroxide solution and shake well then add drops of 1% copper sulphate | Colour to purple | Proteins present |
| Vitamin C | To 1cm3 of DCPIP in a test tube add drops of solutions | The colour of DCPIP remains or no observable change | Vitamin C (Assorbic acid absent) |