

SAMIA SUB-COUNTY JOINT EXAMINATION

Kenya Certificate Of Secondary Education

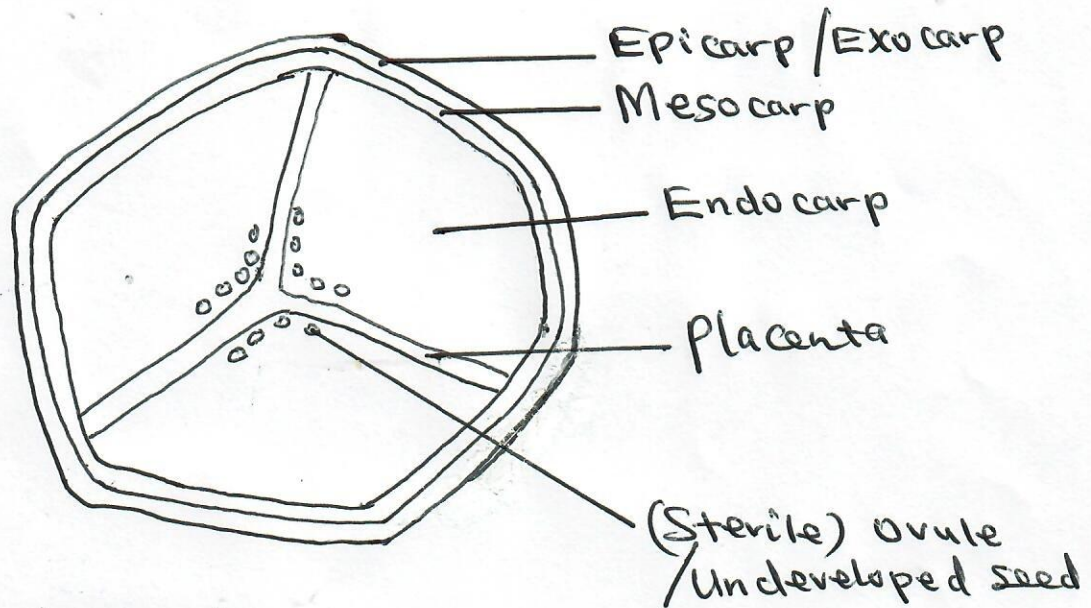
BIOLOGY PAPER 3 (231/3)

MARKING SCHEME

1. (a) (i) Content of visking tubing turns *blue black / black dark blue / bluish black*

(ii) Iodine molecular (are small hence diffuse through visking tubing; iodine react with starch in the visking tubing to produce blue-black compound; starch molecules are too large to pass through the visking tubing)

(b) (i) Ts of D



Accuracy mark

- Drawing: - Continuous outline
- All parts drawn (1 mark)

Label Mark

- Line must touch the structure
- Correct spelling
- Is pericarp is included it spoils for the three parts (2 marks)

D = 2

L = 2

4

(ii)

	Length at start of experiment	Length at end of experiment
Strip of banana peel	4cm	A figure slightly less than 4cm

Reject if units not shown.

(2 marks)

(iii) Solution L is hypertonic; to (cells of specimen D)

Cells of specimen D lose water; by osmosis and become flaccid;

(4 max 3m)

(c) 1 (a) (i) Absorption of mineral salts by root hairs / absorption of digested food into blood stream / Gaseous exchange in plants / animals

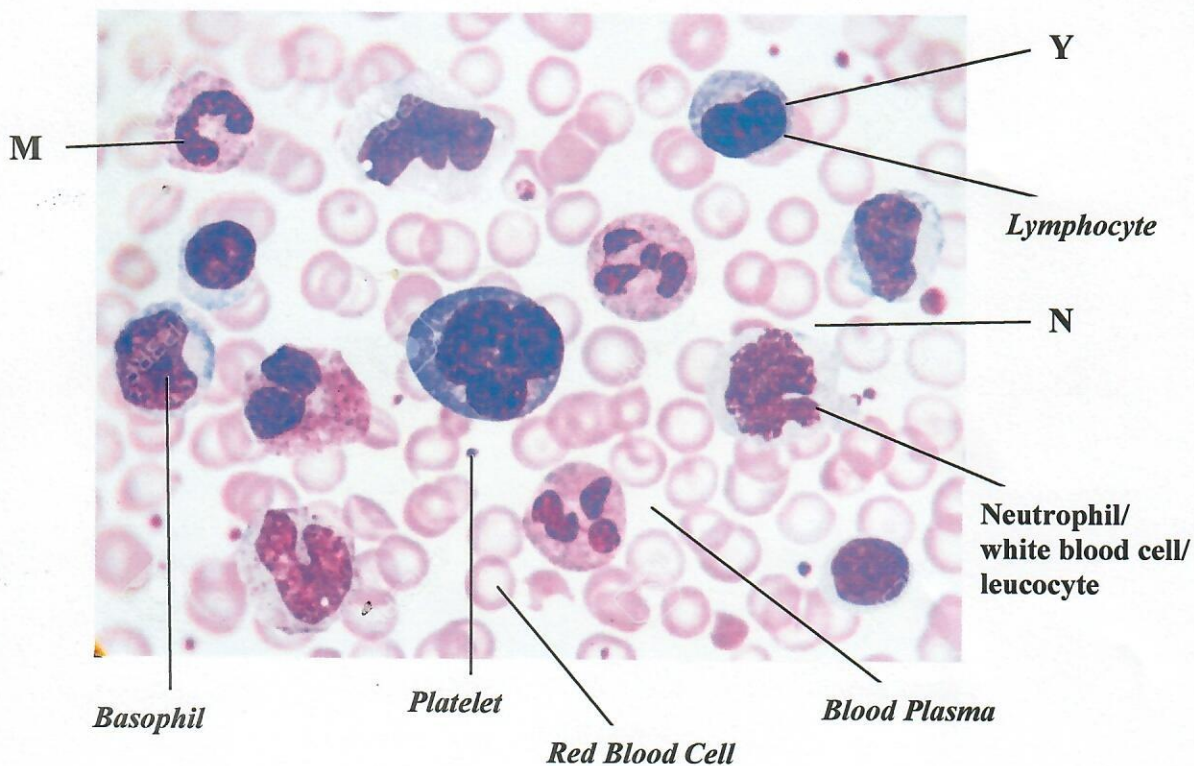
Transport of products of photosynthesis in plants; (any 1 – 1 mark)

1 (a) (ii)– Absorption of water by root hairs

- Support in herbaceous plants
- Opening and closing of stomata
- Feeding in insectivorous plants
- Osmoregulation

(any 1 – 1 mark)

2.



- (a) A – Blood Plasma B – Leucocyte (white blood cell)
K – Platelets (thrombocytes) N – Red blood cells (Erythrocytes)

Reject labels like; granulocyte, agranulocyte

(Any correct label – 1 mark)

Label line must touch the structure

- (b) M – Move towards pathogen, engulf pathogen; and digest by lytic enzymes; by phagocytosis (max – 2 marks)

J – Produces antibodies; which destroy / neutralize the effect of the pathogen. (2 marks)

- (c) Increase in number (1 mark)

- (d) (i) Element N

Transport of respiratory gases / oxygen / carbon iv oxide.

- (ii) Biconcave increase surface area for diffusion of respiratory gases / oxygen / carbon iv oxide; lack nucleus to provide enough packing space for haemoglobin; Have haemoglobin which has a high affinity for oxygen. Has carbonic anhydrase for transport of carbon in oxide.

(any one – 2 marks)

- (e) (i) A - Trachea
B - Bronchus
C - Pleural membrane
D - Alveol

- (ii) - Has rings of cartilage that keep it open
- Has cilia that move mucus and dust particles to the top of the trachea
- Lining secretes mucus which traps dust particles and micro-organisms

- (f) (i) *Cell membrane / plasma membrane / plasmalemma*

(ii) *Cell filament*

3. (a) (i) Name given to the coiled part labeled T found on specimen A
Tendrils; Reject wrong spellings, accept plural (1 mark)

- (ii) Type of response exhibited by the coiled part on specimen A (1 mark)
Thigmotropism / Haptotropism Reject wrong spellings

- (iii) Stimulus responsible for the response named in (ii) above. (1 mark)
Contact *Reject touch*

- (iv) How the response exhibited by the coiled part on specimen A occurred (3 marks)

Due to contact; the auxins / IAA moved away from the surface of contact / accumulated on the surface away from contact; where they caused faster growth / cell elongation hence curving / coiling (around a support)

- (v) Biological significance of the response described in (iv) above to the survival of the specimen. (1 mark)

Has tendrils to provide support; (by coiling around firm support) / to reach for light

- (b) (i) The agent of pollination for the specimen B (1 mark)
• *Insects*

- (ii) Reason (1 mark)
• *Brightly coloured petals*
- (iii) The external features of leaves of the specimen B2 (2 marks)
• *Net veined*
• *Serrated blade / serrated leaf margin*
• *Pointed apex of leaf.*
- (iv) The class to which specimen B belongs (1 mark)
• *Dicotyledonae; Reject dicotyledon*
- (v) Reason for answer in (iv) above (1 mark)
• *Floral parts are in 5 / multiples of 5.*