

JOINT EXAMINATIONS

231/3

MARKING SCHEME

- 1 (a) (i) Apical dominance; Rej wrong spelling
- (ii) Removal of the apical shoot/shoot apex removes auxines; allowing for the development of lateral buds; leading to formation of lateral shoots/branches shown;
- (iii) pruning of crops like tea and coffee leading to increased yields;
Pruning of trees to increase wood;
Trimming of fences to attain the desired shape;
- (b) (i) Hypocotyl; Rej wrong spelling
- (ii) Stores nutrients/food for germinating seed;
Manufactures food to seedling
Protects the embryo/plumule and radical;*Any one*
- (c) (i) Leaf/internal part of a leaf;
- (ii) R spongy layer /cells/mesophyll cells;
- (d) (i) Site for photosynthesis;
- (ii) Has numerous chloroplasts(which contain chlorophyll) for photosynthesis;
Closely packed /vertical arrangement or maximum absorption of light;
Positioned on the upper surface to absorb maximum light;
- (e) Light;
Temperature;
Availability of water
- (f) Length = 1.5cm ± 0.1

$$\text{Actual length} = \frac{\text{Length of image}}{\text{Magnification}}$$

$$= 15000 \div 5000$$

$$= 3 \mu\text{m}; / 3 \text{micrometers}$$

2. (a) (i) Renal vein;
- (ii) Ultra filtration;
- (b) Has numerous mitochondria to provide energy for active transport;
Has microvilli in the lining to increase surface area for reabsorption of substances;
Highly vascularised for transport of reabsorbed substances; Has thin epithelium for rapid diffusion of substances;

- (c) on diagram – loop of henle
- (d) Osmoregulation;/Regulation of PH;
- (e) The distal convoluted tubules and collecting duct wilt be less permeable to water; therefore less reabsorption of water; leading to production of large volume of urine that is dilute;

3. (a) (i) Fruit;
(ii) Has two scars;
- (b) Drawing 1
Labeling 1 (Any correct 2)
Magnification 1
- (c) (i) 2drops acc 2-4drops;
(ii) 6drops;
(iii) If 2drops=0.1%
6drops = $2 \times 0.1 / 6$
=0.03%

- (d) (i) Fish Gill
(ii) Has rings of cartilage to prevent collapsing
Has mucus to trap foreign particles.
- (b) Gaseous exchange
-Excretion of carbon(iv) oxide
- (c) B1 – Trachea
B2 – Lung (rej. Lungs)

- (d) (i)
K2 – Gill bar

Complete answers include the “gill”

(ii)K1 – Gill rakers are pointed ; for trapping solid particles / prevent solid particles from reaching gill filaments and causing damage.

K3 – Numerous gill filaments; to increase the surface area for gaseous exchange.