**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 =l.5cm± 0.1

Actual length=

=15000÷X5000

=3m;/3micrometers

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 =2x0.1/6

=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.