**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.