BIOLOGY (PRACTICALS)
PAPER 3
231/3
MARKING SCHEME

1. (a) (i) A - Renal vein
B - Ureter
C -Pelvis
D -Cortex (4mks)

ii) V - Glomerulus;
W - Proximal convoluted tubule;
X - Distal convoluted tubule;
Y - Blood capillaries (4mks)

(b) - Coiled to increase S.A for reabsorption of substance (ii) The tubule is supplied with blood capillaries to transport reabsorbed substances;

(c) (i) Loop of Henle
(ii) Collecting duct/ Distal convoluted tubule;

(d) Kidney tubule becomes less permeable to water; less water reabsorbed into blood stream; production of large amounts of dilute urine (thus diuresis)

2. (a) Blue black/black dark blue colour is formed

(b) No colour change/colour of Benedict's solution remains;
Rej: No change /no reaction/ no observation /nothing happens

(c) Set-up A- colour changes from blue to green to yellow to orange/brown;
Set-up B: No colour change/ colour of Benedicts' solution remains;
Rj- No change/no reaction/no observation/nothing happens
Set-up C- No colour change/colour of Benedict's solution remains;
Rj- No change no reaction/ no observation/ nothing happens

(d) Set-up A — Enzyme amylase/diastase/invertase (in Q); digests /hydrolysis/breaks down/ converts starch (in liquid X); to reducing sugar/maltose;
Set-up B: boiling denatures/destroys enzymes amylase/diastase/invertase; henc starch is not converted to reducing sugar/maltose;
Set up C:- Hydrochloric acid provides unfavourable PH for enzyme amulase diastase/invertase; hence starch is not converted to reducing sugar/maltose;

(e) Enzyme amylase/diastase/invertase;

(f) To provide optimum temperature for reaction of enzyme amylase/diastase;

3. (a) C -Hypocotyl
Importance —protects the plumule /shoot tip/first foliage leaves /opens path through the soil for the cotyledon to pass/pulls the cotyledon out of the soil.
D Cotyledons/seed leaves
Importance: Photosynthesis
Food storage /food reserves
Provide food for germinating seedlings /young plants.
E Coleoptile/plumule sheath Rej: cover/coat
Importance-protects the delicate tip/first leaves/foliage leaves

(b) (i) nodules/root nodules
(ii) Rhizobium/Rhizobia/Rhizobium bacteria rej. Bacteria alone.

(iii) Symbiotic relatioship in which bacteria gets protection and nutrients while the plant gets nitrogen in form of nitrates fixed by bacteria.

(c) (i) Epigeal

(ii) Cotyledons are brought out of the ground.

(d) Water

Oxygen

Optimum temperature