MARKING SCHEME
P3
BIOLOGY PAPER 3

1.

LIQUID	PROCEDURE	OBSERVATION	CONCLUSION
Q1	Add iodine solution to solution Q1;	No colour changes/iodine colour remained /brown colour is retained;	No starch / starch absent;
	Add equal amount of benedict's Solution to Q1 and then heat.;	No colour change / benedicts solution remained unchanged /Blue colour of benedicts solution remains;	No reducing sugar/reducing sugar absent.;
Q2.	Add iodine solution to Q2;	Black/blue/black/ Blakishblue/bluish/black colour forms;	Starch present;
	Add equal amounts of Benedict's solution to Q2 then heat;	Green → yellow → orange colours observed;	Reducing sugars present;

½ mk each Total

6mks (b)

LIQUID	OBSERVATION	CONCLUSION
Q1	Iodine colour retained /brown colour of iodine retained / No colour change;	No starch/starch absent;
	Green → yellow → orange; (correct sequence)	Reducing sugar present;

½ mk each Total: 2 mks

(c)i) Diffusion;
(ii) Ileum / small intestine; placenta /lungs/ proximal convoluted tubule;

(d) The visking tubing is semi-permeable and has small pores; reducing sugar molecules are small and hence move from region of high concentration to region of low concentration into visking tubing; starch molecules are large and did not diffuse through the small pores of the visking tube;

2. (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
3. (i) 4.5 cm, 1 mk
(ii) Magnified size=4. 5 cm
mg = x 6
real size = $\frac{4.5;}{6}$
= 0.75 cm 2 mks
(i) Dentine ; 1 mk
(ii) Has cusps/ ridges; to enable it grind / chew food; (into smaller pieces)
(iii) Blood vessels;✓ 2 mks
Nerve fibres; ✓ 1 mk