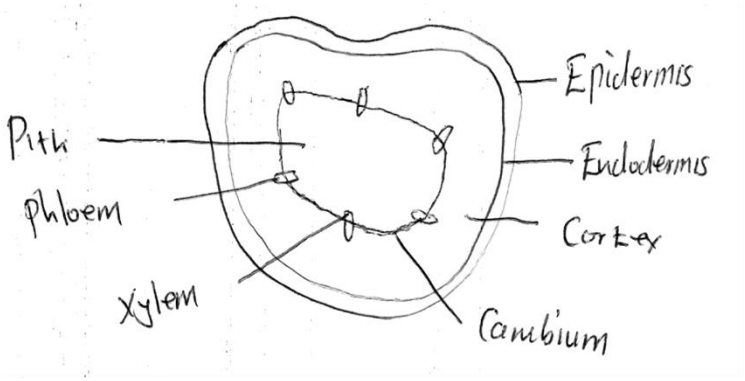
BIOLOGY 231/3
MARKING SCHEME

1(a)



D-2mks
L-3 mks
Mg=1mk

(b)

Part	Function
Epidermis	Protect inner parts from mechanical damage;
Endodermis	
Cortex	Mechanical support
Xylem	Transport of water and mineral salts
Phloem	Translocation of food substances
Pith	Water storage;

(6x1=6mks)

(c)(i) Absorb stain quickly/light pass through; (1x1=1mk)
(ii) Make features clearer and distinguishable; (1x1=1mk)
(d)(i) Dicotyledonae (1x1=1mk)
(ii) Vascular bundles arranged in ring pattern (1x1=1mk)
Pith present;

2.

Food substance being tested for	Procedure	Observation	Conclusion
Reducing sugar	To 2cm3 of specimen L/food substance in a test tube, add equal amount of Benedicts solution; Heat the mixture;	Colour of Benedicts solution persist/remain	Reducing sugar absent;
Starch	To 2cm3 of specimen L/food substance in a test tube, add 3 drops of iodine;	Blue-black colour formed	Starch present;
Protein	To 2cm3 of specimen L in a test tube, add equal amount of 10% sodium hydroxide; Add few drops of 1% copper sulphate	Purple colour formed	Proteins present
Ascorbic acid	To 2cm3 of DCIP in a test tube add specimen L/food substance drop by drop	DCIP decolorized	Ascorbic acid present;

T-13mks

3. (a) (i) Complete metamorphosis; (1x1=1mk)
(ii) Has all 4 developmental stages; presence of larvae stage and pupa (1x1=1mk)
(b)-Larva exploits different ecological ninche to reduce food competition
Pupa avoids adverse environmental conditions (2x1=2mks)
(c)(i) D (1x1=1mk)
(ii) G (1x1=1mk)
(d) G → E → D → F (1x1=1mk)
(e) Juvenile hormone; formation of larval cuticle;
Ecodysone; control moulting/laying of adult cuticle; (4mks)