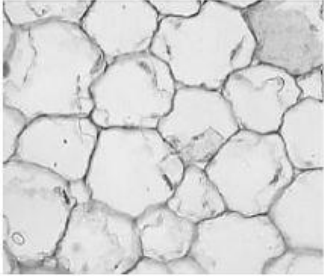
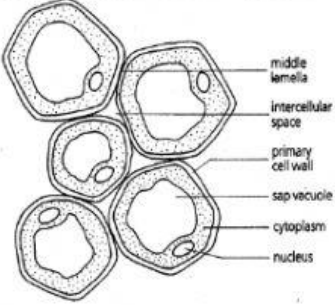
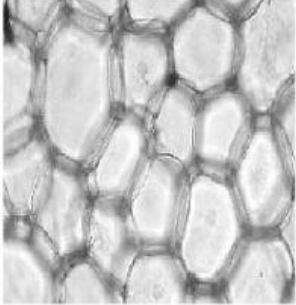
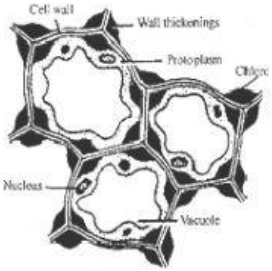
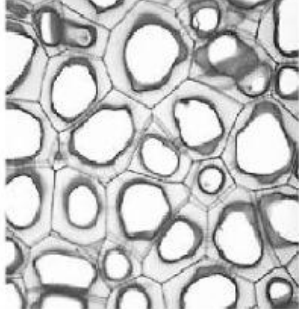
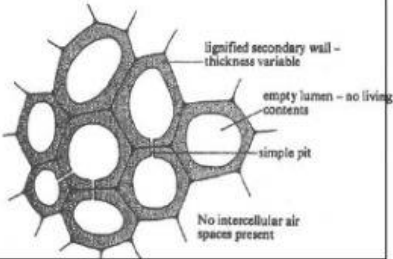


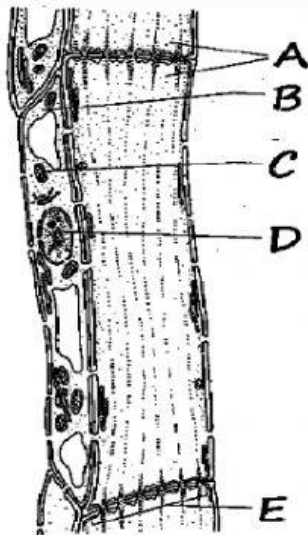
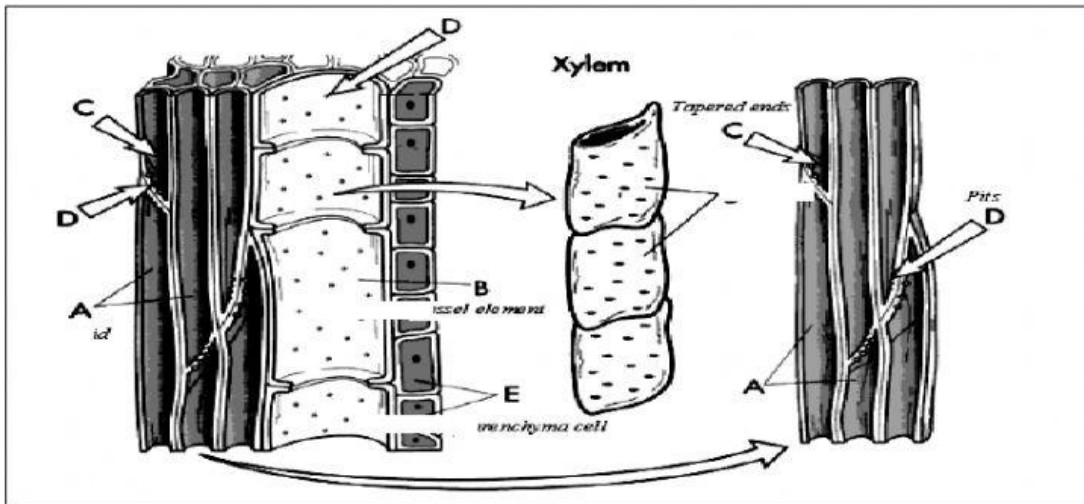
_____ cells	_____ cells	_____ cells
 	 	 
- least specialized _____ cells with nucleus - Isodiametric (spherical) shape - cells are _____ packed & have <u>large</u> intercellular spaces. - contain large, central vacuole. _____ & flexible primary walls consist of cellulose, hemicellulose and pectin.	- differentiated from parenchyma cells. _____ cells with nucleus - cells are polygonal & elongated with tapered end - cells are _____ packed with <u>less</u> intercellular spaces. - with _____ & flexible primary wall consist of cellulose, hemicellulose, and pectin & _____ thickened especially at the corners.	_____ cells when mature, thus there is no _____. - polygonal shaped , elongated with tapered ends (for fibre) & irregular shape (for sclereid). - cells are _____ packed with <u>no</u> intercellular space. - evenly thickened, lignified & rigid _____ walls.
Functions: - form major component of ground tissue - large vacuole allows to _____ organic substance - large intercellular space allows _____ - mesophyll cells (modified parenchyma) contain chloroplast as site for _____	Functions: - As _____ tissue to herbaceous plant & young plants. - Gives flexible mechanical support (allow cells to expand & stretched as young stems grow).	Functions: _____ tissue which provide mechanical strength & rigidity to the plant. - Gives protection from mechanical damage.
Distribution: Cortex	Distribution:	Distribution:

2. Pith	1. Below the epidermis of herbaceous plants	• Leaf veins / vascular bundle
3. Scattered within vascular bundle	2. Midrib of leaves	• Hard shells of seeds & nuts in fruits

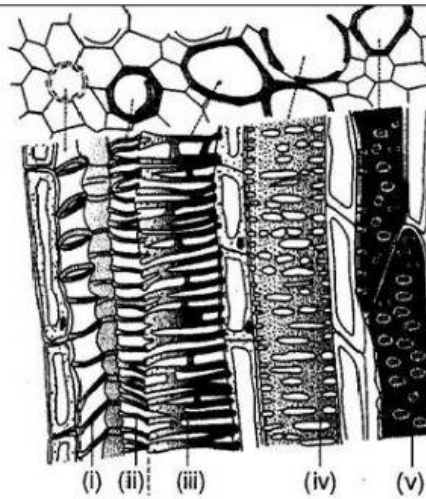
ii. Vascular tissues

Vascular tissue			
○ plant tissue for transporting water, minerals and photosynthesis products in plant			
A) _____ consist of: i. parenchyma cell ii. tracheid iii. vessel element iv. fibres		B) _____ consist of: i. parenchyma cells ii. sieve tube iii. companion cell iv. fibres	
Vessel element	Tracheid	Sieve tube	Companion cell
- no nucleus (dead cells) at maturity - long hollow tube, diameter bigger and shorter than tracheid - Thick lignified secondary wall - the end walls have perforation plates - have pits on cell wall	- no nucleus (dead cells) at maturity - long thin cell with tapered ends - Thick lignified secondary cell wall with pits	- living cells at maturity but nucleus & most organelles degenerate - primary cell wall - Long cylindrical structure - end walls are perforated forming sieve plate - sieve plate has pores which allow cytoplasm to extend between sieve tubes	- living cells with nucleus at maturity - many mitochondria that provide ATP - interconnected to sieve tube by plasmodesmata.
Functions: 1. _____ _____ _____ 2. Give mechanical support		Functions: 1. _____ _____ _____ 2. Companion cell helps sieve tube to transport organic substance	
Distribution: Vascular bundle		Distribution: Vascular bundle	

Exercise 2.3 (f): Identify & label the types of plant tissues given below.



Phloem



Lignified thickening in xylem

Word bank

Annular	Sieve tube	Reticulate	Companion cell
Pits	Spiral	Sieve plate	Mitochondria
Tracheid	Nucleus	Vessel element	Pitted
Scalariform	Parenchyma cell	Tapered ends	

http://learn.mindset.co.za/sites/files/LXL2014/LXL_Gr10LifeSciences_13_Dicotyledonous%20Plants_07May2014.pdf