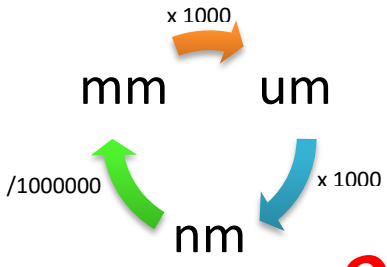
Adv	Dis	Adv	Dis
➢ View living cells/process eg. Mitosis ➢ Natural colour of the specimen can be observed	➢ The max magnification is approx. x2000 ➢ Low resolution ➢ Limited in cellular detail	➢ Magnifies objects up to x500 000 ➢ High resolution	➢ Only dead specimens can be observed ➢ Image in black and white ➢ Lit of preparation is required – can cause artefacts

Transmission EM	Scanning EM
• Electrons passes through a very thin specimen • Produce image have high resolution • Used for very high magnification	• Electrons bounce off the surface of the image • Lower resolution and magnification • 3D image of surface

Resolution – ability to see two adjacent points as distinct entities

MAGNIFICATION



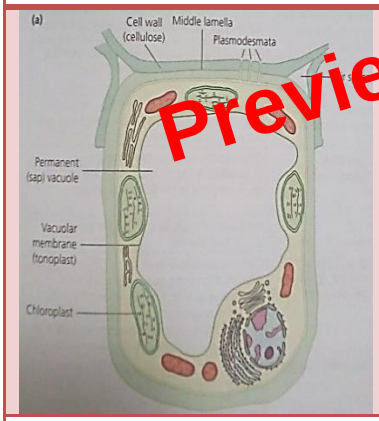
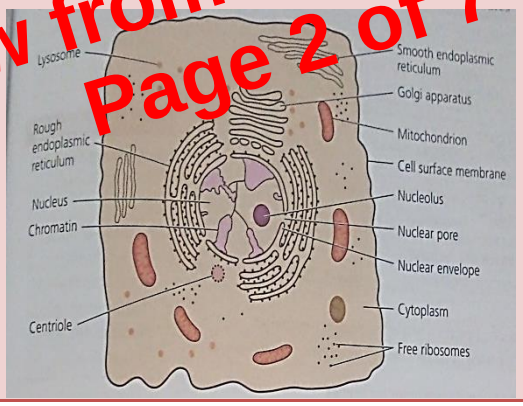
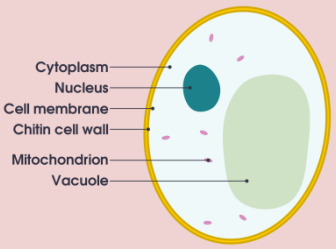
Object – specimen viewed using a microscope

Image – object presented in a micrograph

Magnification = measured size of image/true size

CELL ULTRASTRUCTURE

Detail of a cell when viewed through an EM

Animal cell	Plant cell	Fungal cell
		
No cell wall present	Cellulose cell wall which is fully permeable	Chitin cell wall
No chloroplasts for p/s	Chloroplasts for p/s	None
Small temporary vacuoles	Large permanent vacuole (surrounded by the tonoplast) for turgor support	Possess vacuoles
Possess centrioles which are used in nuclear division	Cell joined by middle lamella – made up of calcium pectate	Cell often multinuclear as new call walls don't always form
Store glycogen	Store starch	Store glycogen
Have both lysosomes	No lysosomes or centrioles	Have lysosomes
No plasmodesmata	Have plasmodesmata	No plasmodesmata