(b) the preparation and examination of microscope slides for use in light microscopy. (Including the use of an eyepiece graticule and stage micrometer.)

How to use an eyepiece graticule and stage micrometer

Eyepiece Graticule

- · Fitted onto the eyepiece
- · Transparent ruler without any units

Stage Micrometer

- · Placed onto the stage
- Microscope slide with an accurate scale (it has units)
- Compared against the number of eyepiece units between 1 stage units to gather the scale on the eyepiece graticule

Once the stage micrometer is removed then because you have the scale of each of the eyepiece divisions, and so you can accurately establish the length of the sample

Calibration of microscope

- 1) Line up eyepiece graticule and the stage micrometer
- 2) Each division on the stage micrometer is 0.1 mm long
- 3) At this magnification, 1 division on the stage micrometer is equivalent to 4.5 divisions on the eyepiece graticule
- 4) Use the equation (Stage divisions / Eyepiece divisions) to work out length of each epu
- 5) 0.1 / 4.5 = 0.02mm
- 6) If an object under the microscope is 20 epu in length then 20 x 0.02 = 0 + 10

(c) the use of staining in light microscopy (To induce the use of differential staining to identify different cellular components and cell trops f

Staining

- In light misroscepts some areas on the specifien absorb more light than others, allowing the outline of the cell to be seen
- However some cells do not absorb different amounts of light and so are transparent, because the light rays simple pass through
- Staining can be used to see the cells contents
- In light microscopes dyes are used, common stains include:
- Methylene blue and Eosin
- The stain is taken in by some parts of the cell more than others, some parts are more stained than others as a result creating a contrast

How to prepare a microscope slide

To use a light microscope then you need to place it on a slide first

Dry mount

Remove a thin slice of your specimen enabling the light to be able to pass through Use tweezers to pick up specimen and place it in the middle Place a cover lip on top

Wet mount

- Specimen is in a liquid.
- Start by pipetting one drop of water onto a life and use tweezers to place th specimen on top of the water drop
- Put a cover slip on top by standing it upright and the lowering it down over the water
- Try not to get air bubbles

Rough Endoplasmic Reticulum (RER) Description

- · A system of membranes enclosing a fluid filled space
- Surface is covered in ribosomes

Function

· To fold and process proteins that have been made by the attached ribosomes



