

Question 21 (8 marks)

Describe a first-hand investigation used to estimate the size of red blood cells on a prepared microscope slide.

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In your description include:

- a list of equipment used;
- a safety precaution needed;
- the step-by-step method used;
- a scaled diagram of a red blood cell.

AIM: To estimate the size of red blood cells on a prepared microscope.

EQUIPMENT: * prepared slide of healthy ~~human~~ blood
* light microscope with power source
* transparent slide ruler (to estimate diameter of field of view)

~~METHOD~~ SAFETY PRECAUTION: Care must be taken when handling slides as they can be easily shattered, resulting in injury from shards of glass. It is advisable to carry slides with both hands.

METHOD: ① view ruler under low power (LP) to estimate diameter of field of view. Calculate diameter for high power (HP) by dividing magnification of LP by the magnification of HP. ② Then times this result by diameter of LP field of view. ③ View prepared slide of blood under LP, then HP.

④ Estimate/count number of red blood cells across the diameter of the field of view. ⑤ Estimate size of red blood cells by dividing the diameter by the number of red blood cells counted. ⑥ Draw scaled diagram of red blood cell.

If diameter was approx 390µm and there were 50 red blood cells across it then estimated size is 7.8µm.



3mm: 1µm