

AQA, OCR, Edexcel

GCSE Science

GCSE Biology

Microscopy Answers

Name:

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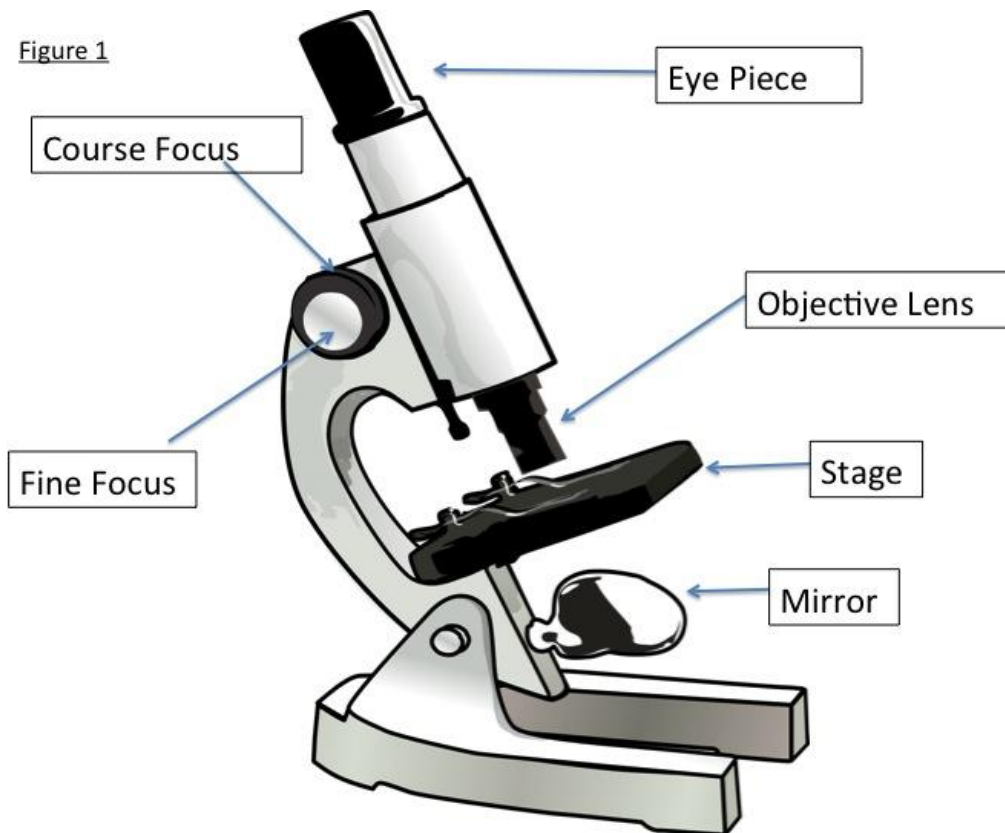
Total Marks: /18

Q1: Why do scientists use microscopes?

A= To view cells in more detail / see cell structures

(1 mark)

Q2: The diagram below shows a light microscope. Complete the labels in figure 1.



A= 1 mark per correctly labelled piece.

(4 marks)

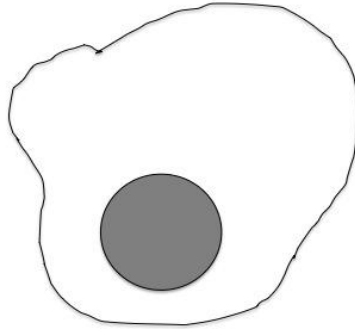
Q3: Explain the function of the mirror in a light microscope.

A= REFLECTS the light into the lens, then into the eye.

(1 mark)

Q4: Figure 2 shows an animal cell using a 10X eye piece lens and a 20X objective lens. Calculate the total magnification of the image shown in figure 2.

Figure 2



A= 1 mark for correct formula –

total magnification= Magnification of eye Piece X Magnification of Objective Lens

1 mark- showing working = $10 \times 20 = 200$

1 mark for correct answer

(3 marks)

Q5: Give a definition of resolution.

A= Smallest distance between 2 points

(1 mark)

Q6: The invention of the electron microscope has allowed scientists to find out more information about cells. Explain how the electron microscope has helped our understanding of cells.

A= Except 3 of the following:

- Allows more detailed view
- See organelles / cell Structure
- Higher magnification
- Can see cross sections of the cell

(3 marks)

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Q7: Electron microscopes provide many advantages for scientists. What is a disadvantage of using an electron microscope?

Tick one box.

Higher Magnification

Expensive

Lower Resolution

A= only one box should be ticked. Any mistakes should be clearly crossed out.
(1 mark)

Q8: Calculate the actual size of an onion cell if it measures 20mm using a 1000X magnification.

A= 1 mark for correct formula –

Actual length of object = measured size of object \div magnification

1 mark for correct numerical answer

1 mark for correct units

Length of cell = $20\text{mm} \div 1000\text{x magnification} = 0.02\text{mm}$ (20 micrometres)
(3 marks)

Q9: Scientists have also developed a scanning electron microscope. What does this allow scientists to do?

A= View samples in 3D

(1 mark)