Cell Biology

GCSE Science • **Combined and Triple** • Grades 3–6

Name: _____ Class: _____ Total: _____ / 48

Show all your working. Marks are given for correct method as well as the final answer.

1. Name two structures found in a plant cell but not an animal cell. **[2 marks]**

Answer: _____

2. State the function of the nucleus. **[1 mark]**

Answer: _____

3. State the function of the mitochondria. **[1 mark]**

Answer: _____

4. State the function of the ribosomes. **[1 mark]**

Answer: _____

5. Give two differences between a prokaryotic and a eukaryotic cell. **[2 marks]**

Answer: _____

6. Name the type of cell that bacteria are. **[1 mark]**

Answer: _____

7. Explain how a sperm cell is adapted to its function. **[3 marks]**

Answer: _____

8. Explain how a root hair cell is adapted to its function. **[3 marks]**

Answer: _____

9. Explain how a red blood cell is adapted to its function. **[3 marks]**

Answer: _____

10. Write down the equation linking magnification, image size and real size. **[1 mark]**

Answer: _____

11. An image is 50 mm across and the real object is 0.1 mm. Work out the magnification. **[2 marks]**

Answer: _____

12. A cell is 0.05 mm wide. Convert this into micrometres. **[2 marks]**

Answer: _____ **µm**

13. An image of a cell is 60 mm wide at a magnification of ×1 500. Work out the real width in micrometres. **[4 marks]**

Answer: _____ **µm**

14. Give one advantage of an electron microscope over a light microscope. **[2 marks]**

Answer: _____

15. Name the type of cell division that produces two identical cells. **[1 mark]**

Answer: _____

16. Describe what happens to the DNA before mitosis begins. **[2 marks]**

Answer: _____

17. Define a stem cell. **[2 marks]**

Answer: _____

18. Give one advantage and one risk of using stem cells in medicine. **[2 marks]**

Answer: _____

19. Compare diffusion and active transport.

(a) State the direction each moves substances in. **[2 marks]**

(b) State which one requires energy, and why. **[2 marks]**

Answer: _____

20. Potato cylinders are placed in sugar solutions of different concentrations.

(a) Name the process that changes their mass. **[1 mark]**

(b) Explain why a cylinder gains mass in pure water. **[3 marks]**

Answer: _____

21. A cell has a surface area of 24 mm^2 and a volume of 8 mm^3.

(a) Work out the surface area to volume ratio. **[2 marks]**

(b) Explain why large organisms need an exchange surface. **[3 marks]**

Answer: _____

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