

**AQA, OCR, Edexcel**

# GCSE Science

## GCSE Biology

Cell Specialisation and  
Differentiation Answers

Name:

**M M E**

Mathsmadeeasy.co.uk

Total Marks: /26

Q1: What is a specialised cell?

A= One that adapts to its 'specific' function

(1 mark)

Q2: Give 2 examples of specialised animal cells.

A = Accept any 2 of the following:

- Sperm
- Nerve
- Muscle
- Ovum
- Red blood cell
- White blood cell
- Fat Cell

(2 marks)

Q3: Give 2 examples of specialised plant cells.

A= Accept any of the following:

- Xylem
- Phloem
- Root hair cells

(2 marks)

Q4: Explain how a sperm cell is specialised to its function

A= Contains 2 of the following points:

- Tail – to Propel/swim
- Pointed head – Contains digestive enzymes to break down outer layer of ovum
- Large mitochondria – Provide cell with lots of energy

(2 marks)

Visit <http://www.mathsmadeeasy.co.uk/> for more fantastic resources.

Q5: Explain the role of the synaptic knob in a nerve cell and give an example of its function.

A= 1 mark: communicates with other specialised cells.

1 mark: for example – eg other nerve cell / muscle cell

(2marks)

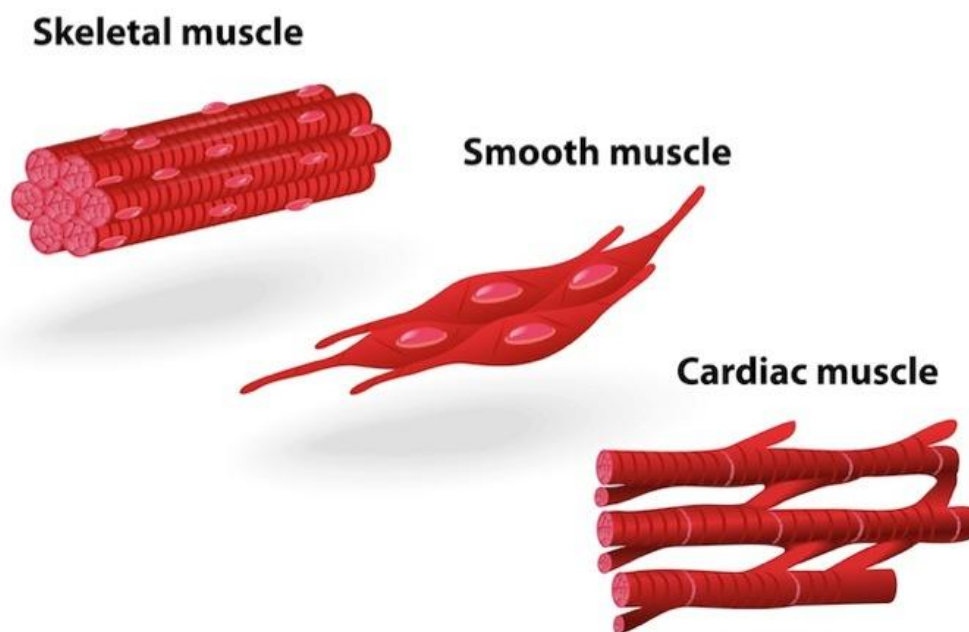
Q6: What 2 types of action can a nerve cell control?

A= 1: Voluntary Action

2: Involuntary Action

(2 marks)

Q7: There are 3 types of muscle cell. Draw and label the 3 types of muscle cells.



A= 1 mark awarded for each correct muscle type diagram

1 mark awarded for correct labels

(6 marks)

Q8: Describe the specialist function of a Xylem cell.

A= Accept one of the following:

- Structure
- Water transportation

(1 mark)

Q9: Describe the specialist function of a Phloem cell.

A= Accept one of the following:

- Translocation
- Transport glucose around the plant

(1 mark)

### Cell Differentiation Questions

Q10: Phloem contains fewer organelles, than other cell types. Discuss why, relating this to their specialised function.

A= 1 mark – Allows transport of sugars

1 mark – move sugars made by photosynthesis.

(2 marks)

Q11: Explain why cell differentiation is important in human cells.

A= Accept the following 2:

- Allows cells to specialise
- Allows specific function

(2 marks)

Q12: Give an example of human cell differentiation.

A= Accept 1 of the following:

- Muscle
- Organs
- Red blood cells

(1 mark)

Visit <http://www.mathsmadeeasy.co.uk/> for more fantastic resources.

Q13: Human cells differentiate early on in their development. Plant cells however can differentiate throughout their life span. Explain why and give an example of plant cell differentiation.

A= 1 mark for example e.g.- flowers/ cutting  
1 mark for allows regrowth.

(2 marks)