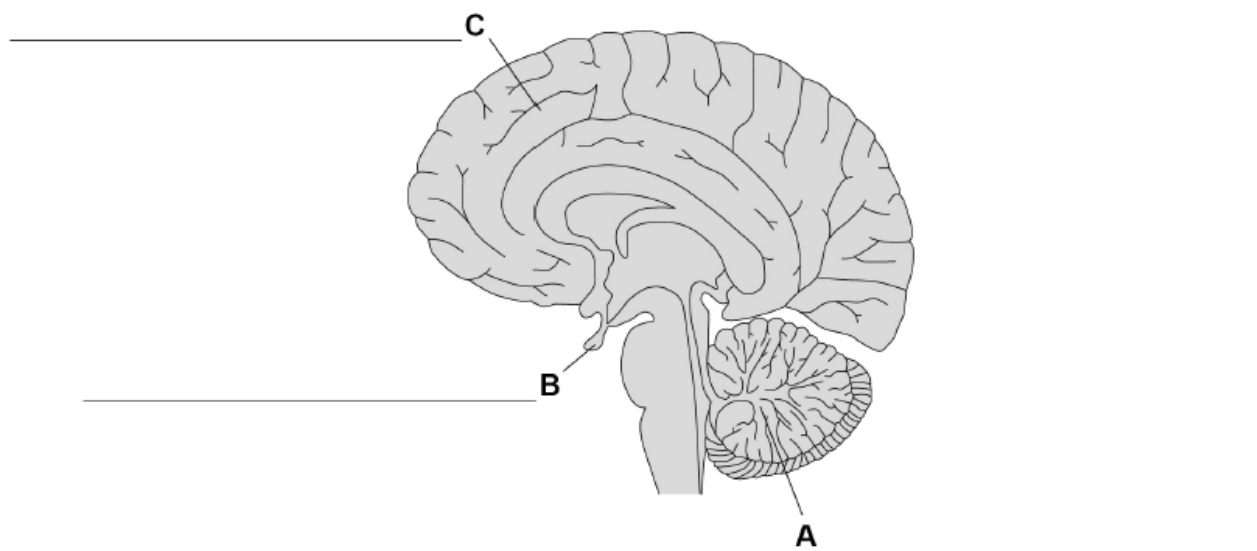


The human nervous system – GCSE Biology1. **No.5****Figure 6** shows the brain.**Figure 6**

0 5 . 1

Label **A**, **B** and **C** on **Figure 6**.**[3 marks]**

Choose answers from the box.

cerebellum

cerebral cortex

medulla

pituitary gland

0 5 . 2

Which part of the brain controls balance when riding a bicycle?

[1 mark]Tick (✓) **one** box.

Cerebellum

☐

Medulla

☐

Pituitary gland

☐

0 5 . 3

The ears send information about sound to the brain.

Which word describes the brain?

[1 mark]

Tick (✓) **one** box.

Coordinator

☐

Effector

☐

Receptor

☐

Stimulus

☐

0 5 . 4

What type of cell carries impulses from the ears to the brain?

[1 mark]

0 5 . 5

Human eyes detect light.

Which part of the eye has cells that detect light?

[1 mark]

Tick (✓) **one** box.

Iris

☐

Lens

☐

Retina

☐

0 5 . 6 The eyes of some birds have specialised cells to detect ultraviolet (UV) light.

Some fruits reflect UV light.

Explain why it is an advantage for birds to be able to detect UV light.

[2 marks]

Figure 7 shows a student reading a book.

Figure 7



There are trees on the far side of the field.

The student looks at the trees instead of looking at the book.

0 5 . 7

What process occurs in the eye when the student looks at the trees instead of looking at the book?

[1 mark]

Tick (✓) **one** box.

Accommodation

☐

Magnification

☐

Reflection

☐

05.8

What change happens in the student's eyes when they look up at the trees?

[1 mark]

Tick (✓) **one** box.

Light rays are refracted less

☐

More light is reflected

☐

The optic nerves move

☐

05.9

The student **cannot** see the trees in focus.

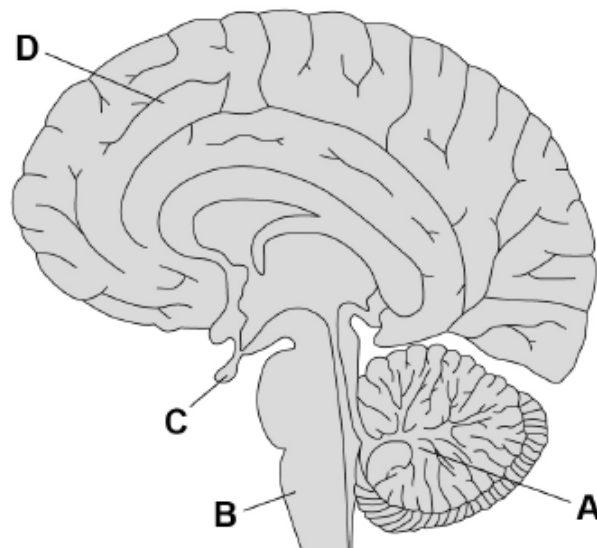
Name the common defect of the eye which causes distant objects to appear out of focus.

[1 mark]

2. No.6

Figure 7 shows the brain.

Figure 7



0 6 . 1

Which part of the brain becomes more active if a person balances on one leg instead of standing on two legs?

[1 mark]

Tick (✓) **one** box.

A

☐

B

☐

C

☐

D

☐

0 6 . 2

Name the part of the brain that is responsible for making a decision.

[1 mark]

0 6 . 3

In most MRI scanners the person being scanned needs to stay completely still.

A functional MRI (fMRI) scanner allows a person to move while the scanner makes images of the person's brain activity.

Suggest how the fMRI scanner could help to find out more about the brain damage a person has.

[3 marks]

0 6 . 4

Describe how the brain receives information about light entering the eye.

You should include the names of structures in your answer.

[3 marks]

The eyes of some birds contain cells that detect ultraviolet (UV) light.

UV light is reflected by some fruits and the urine of small mammals.

Explain how birds that detect UV light have evolved from birds that could not detect UV light.

[6 marks]

[illegible]

3. No.1

The nervous system allows a person to detect stimuli.

0 1 . 1 Draw **one** line from each stimulus to the sense organ that detects the stimulus.

[2 marks]

Stimulus	Sense organ
Chemicals	Ear
Light	Eye
	Tongue

Moving a hand away from a hot object is an example of a reflex action.

0 1 . 2 What is a reflex action?

[2 marks]

0 1 . 3 A muscle in the arm moves the hand away from the hot object.

How does the arm muscle do this?

[1 mark]

Tick (✓) **one** box.

The muscle contracts.

☐

The muscle expands.

☐

The muscle relaxes.

☐

The muscle shrinks.

☐

Two students investigated the effect of drinking coffee on reaction time.

This is the method used.

1. Student **A** holds a metre rule just above student **B**'s hand, as shown in **Figure 1**.
2. Student **A** lets go of the metre rule.
3. Student **B** catches the metre rule as quickly as possible.
4. Student **A** writes down the reading from the scale on the metre rule.
5. Students **A** and **B** repeat steps 1–4 another four times.
6. Student **B** then drinks a cup of coffee.
7. After 15 minutes, students **A** and **B** repeat steps 1–5.

Figure 1

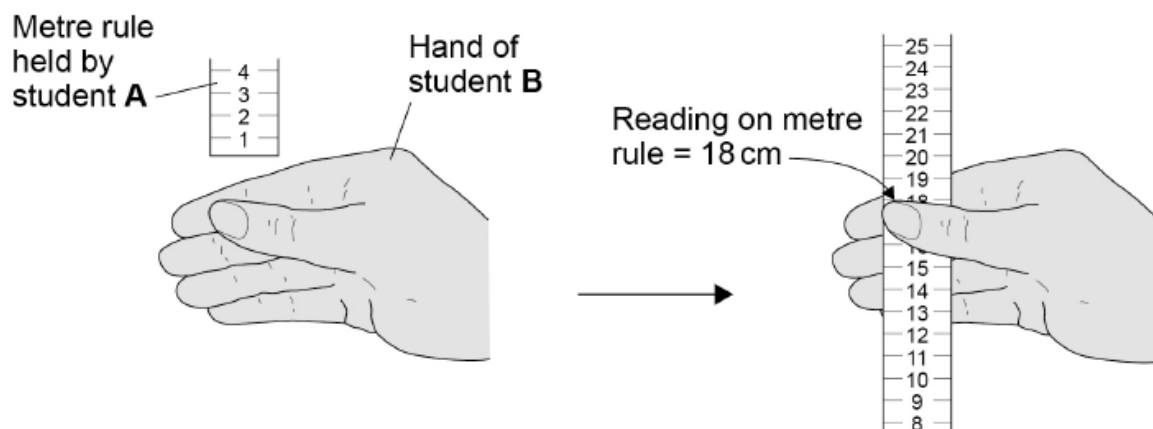


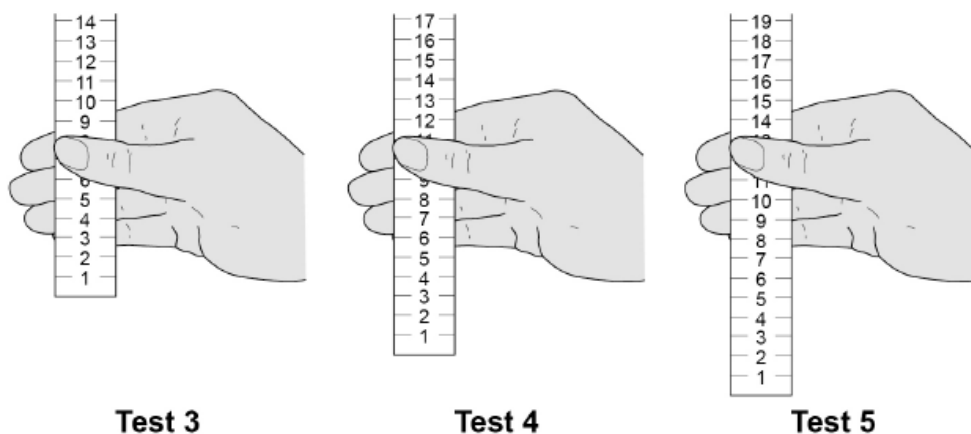
Table 1 shows some of the results.

Table 1

Test	Reading from scale on metre rule in cm	
	Before drinking coffee	After drinking coffee
1	18	10
2	21	14
3	15	
4	12	
5	19	

Figure 2 shows the results after drinking the coffee for tests 3, 4 and 5.

Figure 2



0 1 . 4

Complete Table 1.

Use results from Figure 2.

[2 marks]

The students made the following conclusion:

‘Drinking coffee speeds up reactions.’

0 1 . 5

Give evidence from Table 1 to support the students’ conclusion.

[1 mark]

0 1 . 6

The students’ conclusion may **not** be valid.

Suggest **two** improvements the students could make to their method.

[2 marks]

1 _____

2 _____

4. No.6

Water conservation is important to the human body.

0 6 . 1 Which gland releases the hormone that controls water loss from the body?

[1 mark]

Tick (✓) **one** box.

Adrenal

☐

Pancreas

☐

Pituitary

☐

Thyroid

☐

0 6 . 2 Which hormone helps the kidneys to control water loss from the body?

[1 mark]

Tick (✓) **one** box.

ADH

☐

Adrenaline

☐

LH

☐

Thyroxine

☐

0 6 . 3 A man is walking across a desert.

The man has used up his supply of drinking water.

Explain how the gland you named in Question **06.1** and the kidneys reduce water loss.

[3 marks]

0	6	.	4
---	---	---	---

 Some people have kidney failure.

Doctors may treat patients with kidney failure by either:

- dialysis
- a kidney transplant.

Explain **two** biological reasons why most doctors think that a kidney transplant is a better method of treatment than dialysis.

Do **not** refer to cost or convenience.

[4 marks]

Reason 1 _____

Reason 2 _____
