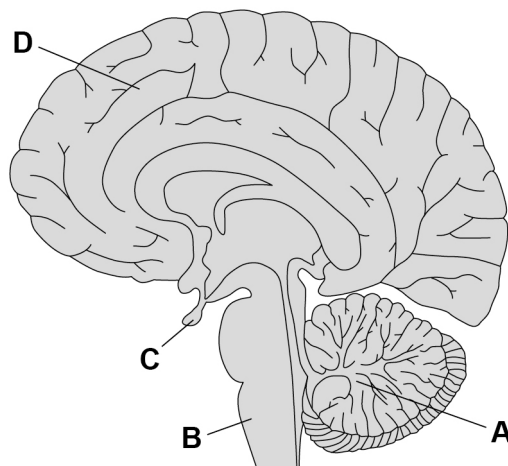


0 6

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]

Question 6 continues on the next page

Turn over ►

Question	Answers	Extra information	Mark	AO / Spec. Ref.
06.1	A		1	AO1 4.5.2.2
06.2	cerebral cortex	allow cerebrum allow cerebral hemisphere(s) ignore D	1	AO1 4.5.2.2
06.3	any three from: <ul style="list-style-type: none"> • can ask people to do different tasks (while taking scan) • to see which part of brain is active / inactive • to compare with a person without brain damage • to see (exactly) where the damage is • (traditional) MRI scanner cannot be used if people can't stay still 	allow can ask person to do a (specific) task allow to see which part of the brain is working allow examples such as children or patients with Parkinson's disease allow may be better for people who are claustrophobic	3	AO3 4.5.2.2
06.4	(cells in) retina sensitive to light	allow retina detects light allow rods / cones detect light	1	AO1 4.5.2.1
	impulse passes along (sensory) neurone	allow electrical signal or electrical message passes along (sensory) neurone	1	4.5.2.3
	(along) optic nerve	allow chemical transmission across synapse	1	

Question	Answers	Mark	AO / Spec.
06.5	Level 3: Relevant points (reasons/causes) are identified, given in detail and logically linked to form a clear account.	5–6	AO2
	Level 2: Relevant points (reasons/causes) are identified, and there are attempts at logical linking. The resulting account is not fully clear.	3–4	AO2
	Level 1: Points are identified and stated simply, but their relevance is not clear and there is no attempt at logical linking.	1–2	AO1
	No relevant content	0	4.5.2.3
	Indicative content <ul style="list-style-type: none"> • mutation (in gene / DNA) • randomly or due to chance • causes new / different protein / (visual) pigment to be made • in the retina of bird • (so more) variation in the wavelengths of light birds retinas could detect • birds with the mutation or birds able to detect UV are more likely to see fruits (that reflect UV) • birds with the mutation or birds able to detect UV are more likely to see where small mammals are or have been • therefore get more food (small mammals or fruit) • avoid being eaten (by small mammals) • out competing those birds without the mutation or birds not able to detect UV • so more likely to survive and reproduce or have offspring • by natural selection • passing on allele / gene / mutation to offspring • repeated over many generations <p>For Level 3 a link to UV vision is required</p>		4.6.2.1 4.6.2.2 4.6.3.1 4.6.3.4 4.7.1.3 4.7.1.4
Total		14	