6.8 Ways of Studying the Brain: Scanning Techniques and EEG: 10-minute Pack

AQA 7182 · about 10 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer all questions. Full-sentence answers required for extended questions and any question worth 3 marks or more. Allow about 10 minutes for the whole pack.

1 In the context of ways of studying the brain, outline what a post-mortem examination involves and name one type of analysis that can be done on brain tissue.

(Total for Question 1 is 2 marks)

2 Briefly state one use of EEG in research on sleep stages, as applicable to methods for studying the brain.

(Total for Question 2 is 2 marks)

3 Outline one limitation of post-mortem studies when inferring causes of behaviour during life in brain research.

(Total for Question 3 is 2 marks)

4 State one limitation of EEG in localising the source of electrical activity within the brain, compared with structural or functional imaging.

(Total for Question 4 is 2 marks)

© Revision Library | revisionlibrary.co.uk

Mark scheme · 6.8 Ways of Studying the Brain: Scanning Techniques and EEG: 10-minute Pack

Question 1

states that a post-mortem examination involves inspecting the brain after death to identify structural or tissue changes oe **B1**

names a type of analysis such as structural examination for lesions, histology, or neurochemical assay (e.g. neurotransmitter levels) oe **B1**

Answer: A post-mortem examination inspects the brain after death to identify structural damage or tissue changes. Analyses can include structural inspection for lesions or histological and neurochemical assays to measure neurotransmitter levels.

Question 2

states a use, e.g. EEG is used to identify different sleep stages by recording characteristic wave patterns such as slow-wave sleep and REM-associated patterns oe **B1**

may mention that EEG helps classify the stages and transitions during sleep recording oe **B1**

Answer: EEG is used to identify different sleep stages by recording characteristic wave patterns, for example slow-wave activity in deep sleep and patterns associated with REM sleep, allowing classification of stages and transitions.

Question 3

identifies a limitation, e.g. observed damage may not have caused the behaviour recorded during life oe **B1**

explains why this matters, e.g. lack of causal proof because changes could be the result of other factors or post-mortem processes oe **B1**

Answer: Limitation: damage seen after death cannot be shown definitively to have caused the behaviour during life, because other factors or post-mortem changes might account for the findings.

Question 4

identifies limitation, e.g. poor spatial resolution making it hard to pinpoint the exact source of recorded activity within the brain oe **B1**

explains impact, e.g. signals are smeared by the skull and scalp, so EEG cannot localise deep brain activity precisely oe **B1**

Answer: Limitation: EEG has poor spatial resolution, because electrical signals are smeared by the skull and scalp, so it cannot precisely localise deep or closely spaced sources of activity.

© Revision Library | revisionlibrary.co.uk