



**EXAM PAPERS PRACTICE**

# **Psychology**

## **Biopsychology Topic Questions**

**1** Which **one** of the following responses results from the action of the sympathetic division of the autonomic nervous system? Shade **one** box only.

- A Decreased pupil size
- B Increased digestion
- C Increased heart rate
- D Increased salivation

(Total 1 mark)

**2** Read the following statements and decide whether they are **TRUE** or **FALSE**.

- (a) Motor (efferent) neurons carry messages to the central nervous system.  
(Tick the correct box)

TRUE	FALSE
<input type="checkbox"/>	<input type="checkbox"/>

(1)

- (b) The nucleus of a neuron is found outside the cell body (soma).  
(Tick the correct box)

TRUE	FALSE
<input type="checkbox"/>	<input type="checkbox"/>

(1)

(Total 2 marks)

**3** Discuss research into the disruption of biological rhythms (eg shift work, jet lag).

(Total 16 marks)

**4** Martha was telling her friend Sanya about her recent frightening experience.

'I was walking home by myself in the dark. Suddenly, I heard footsteps behind me and I realised that someone was getting closer to me. I saw a bus at the bus stop and decided to run. I don't think I have ever moved with such speed. I leapt on the bus – shaking, sweating and my heart was beating so fast I nearly collapsed.'

Outline the role of the central nervous system **and** autonomic nervous system in behaviour. Refer to Martha's frightening experience in your answer.

(Total 4 marks)

5

Briefly outline the process of synaptic transmission.

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(Total 2 marks)

6

Complete the following sentence. Shade **one** box only.

The somatic nervous system

- A comprises of two sub-systems.
- B connects the central nervous system and the senses.
- C consists of the brain and spinal cord.
- D controls involuntary responses.

(Total 1 mark)

7

The human female menstrual cycle is an example of **one** type of biological rhythm; it is called a:

- A circadian rhythm
- B infradian rhythm
- C ultradian rhythm

(Total 1 mark)

8

Discuss the role of endogenous pacemakers in the control of **one or more** biological rhythms.

(Total 16 marks)

9

Briefly evaluate the use of EEGs as a way of identifying cortical specialisation in the brain.

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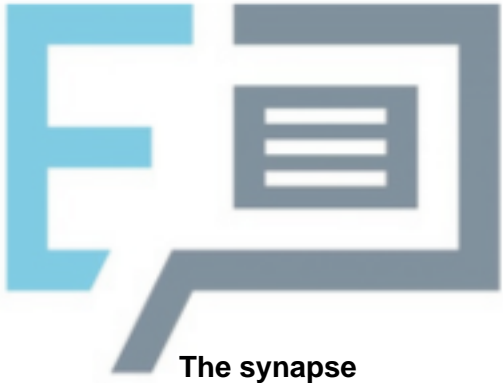
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(Total 3 marks)

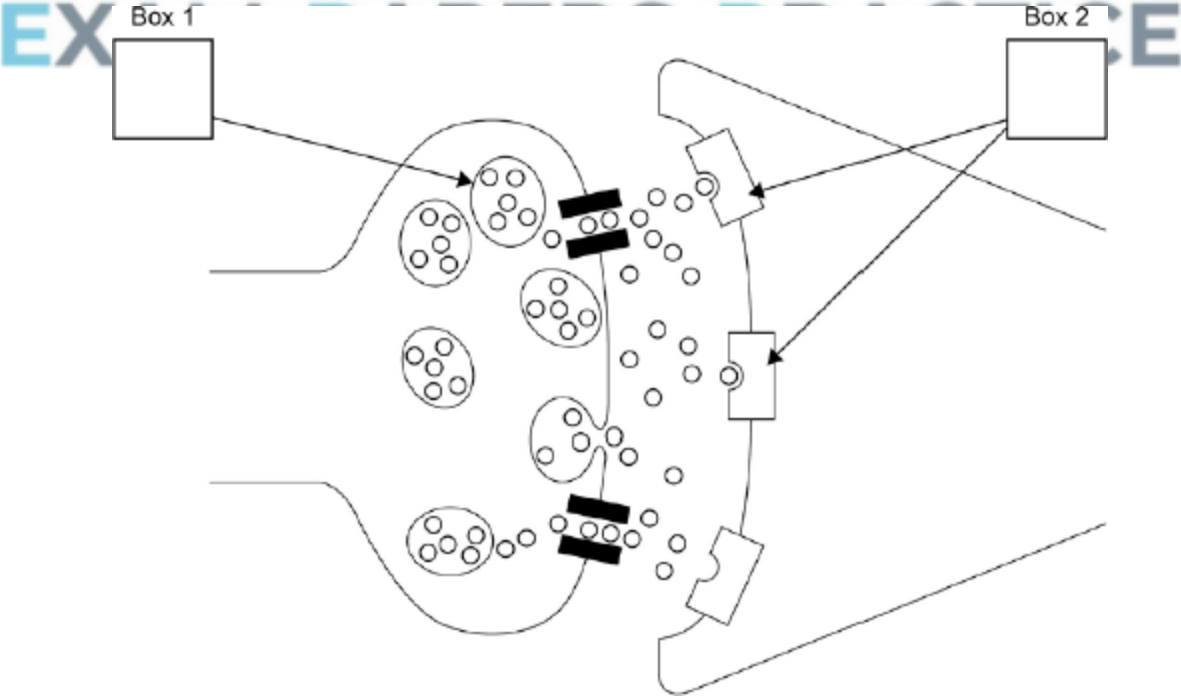
10

Label the **two** areas of the synapse in the diagram below by putting the appropriate letter in each box.

- A Axon
- B Dendrites
- C Neurotransmitters
- D Receptor sites
- E Vesicle



The synapse



(Total 2 marks)

11

The electroencephalogram (EEG) and event-related potentials (ERPs) both involve recording the electrical activity of the brain.

Outline **one** difference between the EEG and ERPs.

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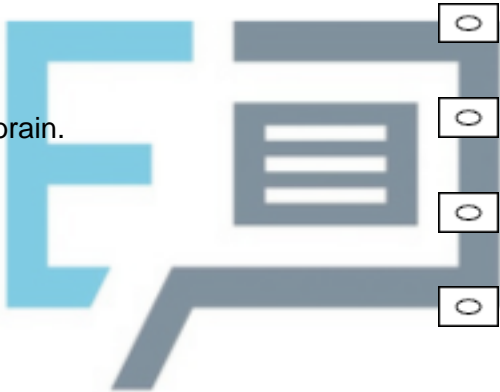
(Total 2 marks)

12

Complete the following sentence. Shade **one** box only.

Sensory neurons carry information

- A away from the brain.
- B both to and from the brain.
- C towards the brain.
- D within the brain.



(Total 1 mark)

13

Robert suffered a stroke at the age of 55. After the stroke he was paralysed down his right side, though he could move his left arm and leg easily. Robert could clearly understand what was said to him, but was unable to produce any speech.

Discuss how knowledge of hemispheric lateralisation and language centres in the brain has helped our understanding of cases such as Robert's. Refer to Robert's case in your answer.

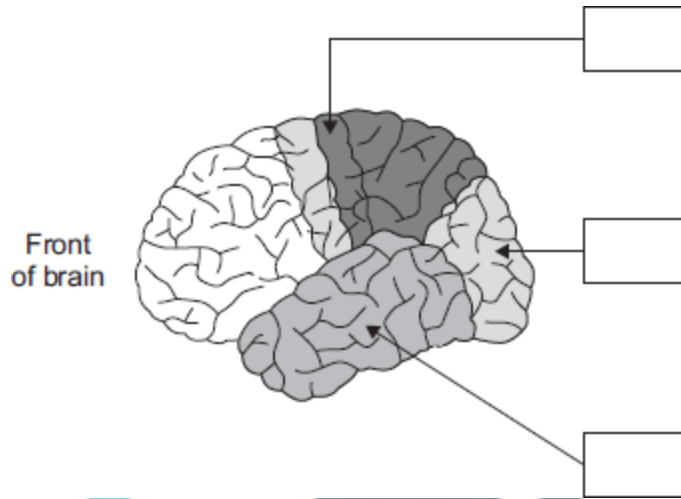
(Total 16 marks)

14

Psychologists have identified many areas of cortical specialisation in the brain. These include:

- A the motor centre
- B the auditory centre
- C the visual centre
- D the somatosensory centre.

Below is a diagram of the human brain. Identify three areas of cortical specialisation by writing **A**, **B**, **C** or **D** in each of the boxes that are provided. Use a different letter for each box.



(Total 3 marks)

15

Briefly explain **one** function of the endocrine system.

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(Total 2 marks)

16

Briefly evaluate research using split brain patients to investigate hemispheric lateralisation of function.

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(Total 4 marks)

17

Split brain patients show unusual behaviour when tested in experiments. Briefly explain how unusual behaviour in split brain patients could be tested in an experiment.

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(Total 2 marks)

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18

Using an example, explain what is meant by the *fight or flight response*.

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(Total 3 marks)



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Using your knowledge of localisation of function in the brain, identify the area of cortical specialisation. Shade **one** box only for each area.

(a) Broca's area

A	<input type="radio"/>	B	<input type="radio"/>	C	<input type="radio"/>	D	<input type="radio"/>	E	<input type="radio"/>	F	<input type="radio"/>
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(1)

(b) Somatosensory cortex

A	<input type="radio"/>	B	<input type="radio"/>	C	<input type="radio"/>	D	<input type="radio"/>	E	<input type="radio"/>	F	<input type="radio"/>
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(1)

(c) Visual cortex

A	<input type="radio"/>	B	<input type="radio"/>	C	<input type="radio"/>	D	<input type="radio"/>	E	<input type="radio"/>	F	<input type="radio"/>
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(1)

(d) Wernicke's area

A	<input type="radio"/>	B	<input type="radio"/>	C	<input type="radio"/>	D	<input type="radio"/>	E	<input type="radio"/>	F	<input type="radio"/>
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(1)

(e) Motor corte

A	<input type="radio"/>	B	<input type="radio"/>	C	<input type="radio"/>	D	<input type="radio"/>	E	<input type="radio"/>	F	<input type="radio"/>
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(1)

(Total 5 marks)

22

Outline the role of adrenaline in the fight or flight response.

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(Total 4 marks)

23

Which **two** of the following statements about the fight or flight response are correct?

Shade **two** boxes only.

During the fight or flight response:

- A there is a decrease in the release of adrenaline
- B the flow of blood is diverted from the surface of the skin
- C the process of digestion is inhibited
- D the parasympathetic division is in control of functioning
- E there is a reduction in the rate of respiration

(Total 2 marks)



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