

PiXL Independence:

Psychology – Student Booklet

KS5

AQA Style Biopsychology

Contents:

- I. Multiple Choice Questions – 20 credits in total
- II. Short Answer Questions – 10 credits each
- III. Sarah Scott Quiz – 20 credits per question
- IV. Concepts and Application to the Real World – 60 credits per question
- V. Academic Articles – 80 credits per article
- VI. Essay Style Questions – 100 credits per question

I. Multiple Choice Questions

1. The sympathetic branch of the autonomic nervous system is responsible for:
 - a. The rest and digest response
 - b. The fight or flight response
 - c. Both A and B
 - d. Neither A nor B

2. Motor neurons:
 - a. Carry messages from sensory neurons to relay neurons
 - b. Carry messages from relay neurons to receptors
 - c. Carry messages from receptors to the CNS
 - d. Carry messages from the CNS to effectors

3. A neuron will generate an action potential if:
 - a. A presynaptic neuron generates an action potential
 - b. The sum of the effects of the adjacent neurons is inhibitory
 - c. The sum of the effects of adjacent neurons is excitatory
 - d. None of the above

4. The fight or flight response releases adrenaline which:
 - a. Stimulates digestion
 - b. Dilates pupils
 - c. Decreases heart rate
 - d. Inhibits sweat glands

5. The endocrine system passes messages:
 - a. Through neurons
 - b. Through synapses
 - c. Through the blood
 - d. None of the above

6. The motor cortex is located towards the rear of the:
 - a. The Frontal lobe
 - b. The Parietal lobe
 - c. The Temporal lobe
 - d. The Occipital lobe

7. Sperry's research was criticised for:
- a. Having small sample sizes
 - b. Having an inadequate control group
 - c. Having individual differences between the participants
 - d. All of the above
8. EEG data shows:
- a. Brain activity to specific stimuli
 - b. The state of the brain after death
 - c. Blood flow
 - d. General brain activity
9. The stages of sleep are an example of
- a. An infradian rhythm
 - b. A circadian rhythm
 - c. An ultradian rhythm
 - d. None of the above
10. The main endogenous pacemaker responsible for regulating sleep is:
- a. Light
 - b. Noise
 - c. Social Activities
 - d. The Suprachiasmatic nucleus

II. Short Answer Questions

1. Describe the structure and function of the central nervous system.
(4 marks)
2. Explain the function of sensory neurons.
(2 marks)
3. Describe the process of synaptic transmission.
(4 marks)
4. Explain the fight or flight response using an example.
(6 marks)
5. Distinguish between the nervous system and the endocrine system.
(4 marks)
6. Describe the role of the somatosensory cortex.
(3 marks)
7. Identify the language centres and describe what research into hemispheric lateralisation has shown about language in the brain.
(6 marks)
8. Explain why post mortems are a useful way of studying the brain.
(4 marks)
9. Describe infradian rhythms using an example.
(4 marks)
10. Distinguish between endogenous pacemakers and exogenous zeitgebers.
(4 marks)

III. Sarah Scott Quiz

Sarah Scott: Stroke victim

<https://www.youtube.com/watch?v=Wn08mkGbGnQ&list=FLG8HXNkk0CQxzUdQ2adBENA>

1. Outline the brain scan that Sarah experienced and describe what the results showed.
2. Sarah had paralysis in her right side when she awoke in hospital. Explain what this tells us about the location of her stroke.
3. Describe the type of aphasia Sarah is suffering from and explain where in her brain has been affected.
4. Describe the type of aphasia Sarah is not suffering from and explain what this tells us about what parts of her brain are not affected by her stroke.
5. Describe the results of one study and explain what they suggest about Sarah's recovery.
6. Explain what is meant by plasticity, using Sarah as an example.
7. Explain how Sarah's brain will recover its functions.
8. Explain why Sarah's speech has improved over time.
9. Explain how Sarah's age impacts her ability to recover.
10. Explain what is meant by lateralisation and how it is relevant to Sarah's stroke.

IV. Concepts and Application to the Real World

1. Describe how both nervous systems function when playing a sport.
2. Describe the effect motor neuron disease has on the function of motor neurons and the consequences this has for sufferers.
3. Explain the influence fluoxetine has on synapses.
4. Explain why the fight or flight response can be seen as maladaptive in current society.
5. Outline the role of the endocrine system in the development of diabetes.
6. Explain what the case of Phineas Gage taught us about localisation of function.
7. Describe the different techniques needed to treat different types of aphasia.
8. Describe the case of Gabrielle Giffords with reference to plasticity and functional recovery.
9. Explain what research has shown about the circadian rhythms of blind people.
10. Explain why people who work night shifts may have sleep problems, with reference to endogenous pacemakers and exogenous zeitgebers.

V. Academic Articles

1. [Stress and Yoga in Children](#)

Describe the findings of this research with regards to the influence of yoga on the autonomic nervous system.

2. [Sensory Neuron Diseases](#)

Describe at least two types of sensory neuron diseases discussed in this article.

3. [Brains of Autistic Children](#)

Explain what this research suggests about the differences in synaptic pruning in children with autism compared to children without.

4. [Neurotheology: Neuroscience of the Soul](#)

Describe at least two different areas of the brain that have been found to be connected with religiosity.

5. [Paul Broca's Historic Cases](#)

Outline some of the conclusions this research made by studying Broca's patients in more detail.

6. [Plasticity of Language](#)

Describe the findings of Thulborn's study into functional recovery of Aphasic Patients.

7. [Circadian Rhythm Abnormalities](#)

Describe two disorders that arise from problems with Circadian Rhythms.

VI. Essay Style Questions

100 credits per question.

1. *Brian is walking home from work one day and decides to take a shortcut through the park. It is dark outside and Brian walks quickly to get through the park as he doesn't think it feels too safe. All of a sudden Brian hears footsteps behind him getting quicker and quicker. His heart starts beating really quickly and his mouth goes dry as he worries someone is about to attack him. It doesn't seem too dark any more to Brian and as he turns he can see the shadowy figure running to approach him. He looks more closely and realises it is his friend Bob. As he breathes a sigh of relief, his heart slows down and he begins to feel better.*

Outline the role of the Autonomic and Central nervous system and explain how they are involved in the experience of Brian.

(8 marks)

2. Outline the structure of three different types of neurons and describe each of their functions when a person touches something hot.

(8 marks)

3. Explain the influence of drug therapy on synaptic transmission and evaluate the use of drug therapy for psychological disorders.

(10 marks)

4. Discuss the claim that brain functions are localised.

(10 marks)

5. Discuss research into the localisation of language centres in the brain.

(16 marks)

6. Outline and evaluate research into the recovery of the brain post trauma.

(12 marks)

7. Discuss the contribution of split brain research to our understanding of hemispheric lateralisation.

(16 marks)

8. Describe how EEGs are used to study the brain. Evaluate the use of EEGs with reference to one other scanning technique.

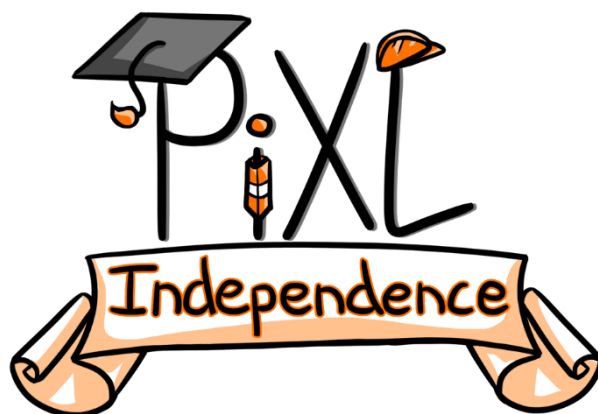
(10 marks)

9. Outline and evaluate research into two or more biological rhythms.

(16 marks)

10. Discuss the relative contribution of endogenous pacemakers and exogenous zeitgebers on the sleep/wake cycle.

(8 marks)



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