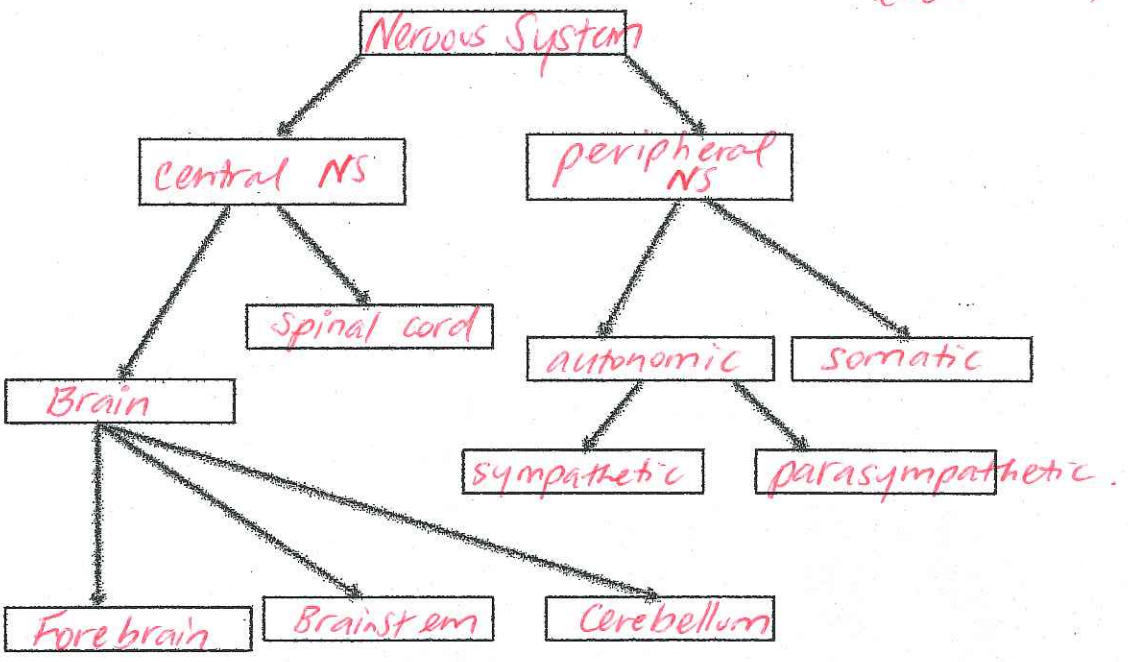
St Mark's Anglican Community School
Year 12 Psychology Topic Test
Unit 3: Biological Influences/Bases of Behaviour
Term 1, 2016

Reading time	***5 minutes***
Working time	***50 minutes***
Total marks	***54 marks***

Question 1 **(6 marks)**

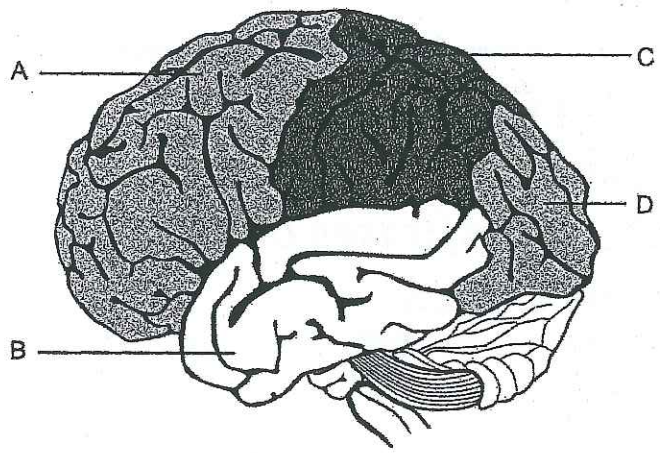
Complete the chart below to best represent the **Nervous System**.

(½ mark for each box)



Question 2 **(8 marks)**

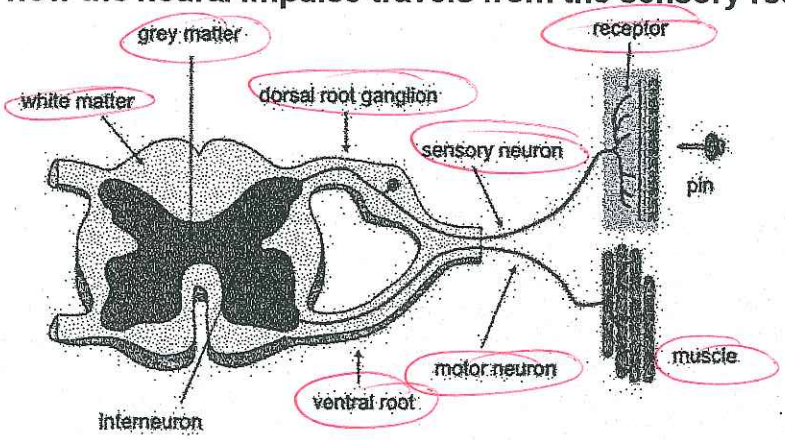
Complete the table below by naming the lobes of the brain and describing **one** main function of each lobe.



	Name of Lobe (4)	Function (4)
A	Frontal	• thinking, decision making, feeling, behaviour • planning/controlling movement.
B	Temporal	• auditory perception • hearing, language, speech production, memory
C	Parietal	• bodily sensations • touch, temperature, pain • spatial awareness, some aspects of speech • read, write, maths.
D	Occipital	• visual functions of eyes • provides quick responses to environment.

Question 3 **(5 marks)**

The spinal cord and brain together form the central nervous system. **Describe how the neural impulse travels from the sensory receptor to the muscle.**



marks for using 5 of these words.

E.g.

(1) receptor → sensory neuron towards brain
(1) enter dorsal root (back of cord)
(1) msg to brain / grey matter, white matter
(1) motor neuron away from brain exits through ventral root (front of cord).
(1) muscle moves.

Question 4 **(4 marks)**

Outline **one structural** difference and **one functional** difference between a **motor neuron** and a **sensory neuron**.

	Structural (2)	**Functional** (2)
Motor Neuron	cell body at one end	control muscle contractions
Sensory Neuron	cell body in middle of neuron	receives info from sensory organs

Question 5

A person is sitting inside a quiet house watching television when suddenly there is a loud noise outside.

a) List **three** symptoms produced by the **autonomic nervous system** that the person might experience. **(3 marks)**

(1) pupils dilate

(1) heart rate accelerates

(1) bladder relaxes

b) Name the division of the autonomic nervous system that is responsible for **producing** these symptoms. **(1 mark)**

(1) Sympathetic

c) Name the division of the autonomic nervous system that is responsible for the **reduction** of these symptoms. **(1 mark)**

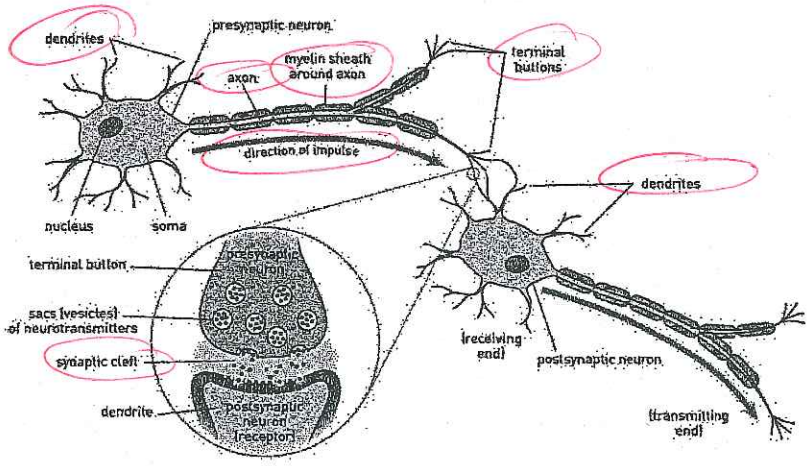
(1) Parasympathetic

Question 6

The below diagram is a close up of the activity occurring in the synaptic gap between the dendrite of a neuron and the axon of another neuron.

a) Define neurotransmitter and give an example **(2 mark)**

b) Explain how neurotransmitters travel between neurons **(6 marks)**



6 marks for using 6 words correctly.

(1) neurotransmitter: Chemical messenger that enable activity to travel across the synaptic gap between neurons

(1) E.g. dopamine / serotonin / noradrenaline

E.g. - axon sends - presynaptic neuron of sac/vesicle of n.
- neurotransmitter released from axon terminal
- impulse has been sent along axon (action potential)
- neurotransmitter crosses synaptic gap
- reaches receptor on dendrite
- attaches to receptor and reabsorbed by neuron.

Question 7 **(6 marks)**

Hormones are chemical messengers produced by endocrine glands. Describe the **function** and **location** of the following glands in our body:

a) **Adrenal glands**:

(1) location: on top of each kidney

(1) helps prepare us to deal with emergencies "fight or flight"

b) **Thyroid glands**:

(1) location: sits low on front of neck.

(1) brain and nervous system develop correctly

c) **Pituitary glands**:

(1) location: pea size, below hypothalamus.

(1) - triggers release of hormones from all other glands
- produces growth hormone that stimulates growth and development of body cells. -puberty.

Question 8 **(6 marks)**

Name **one physiological** and **one psychological** effect of each of the following classes of psychoactive drugs.

a) Stimulants

(1) Physiological effect:
excite nervous system
arouse the body's functions

(1) Psychological effect:
elevate mood
sense of euphoria
increased self-confidence ie cocaine

b) Depressants

(1) Physiological effect:
calm activity of nervous system
slow the body's functions

Psychological effect:

euphoria
feeling of calmness, peacefulness (heroin)

c) Hallucinogens

Physiological effect:

give us sensory images without input from senses.

Psychological effect:

reduce inhibitions ie marijuana

euphoria (pleasant) vs terror (panic) ie LSD

Question 9 **(6 marks)**

Aphasia is the impairment of language caused by damage to the brain. It is usually caused by a stroke and can affect talking, reading, writing and understanding others but it does not affect intelligence. In the table below, there are two types of aphasia. Fill in the blank boxes with the correct information.

	Broca's Aphasia	**Wernicke's Aphasia**
Location of Brain Damage (Lobe and Hemisphere)	(1) Frontal lobe (1) left hemisphere	(1) Temporal (1) left
Language Difficulties (1)	difficulty putting words together and forming complete sentences. (1)	unable to understand / comprehend written or spoken language.
Fluency of Speech	Not fluent and requires effort	Very fluent but makes no sense

END OF TEST