UNIVERSITY OF JOHANNESBURG

PROGRAM:	**NURSING**
SUBJECT:	**PHYSIOLOGY 1**
CODE :	**HPH 1A20**
DATE :	**EXAMINATION – 30 MAY 2017**
TIME :	**12:30**
DURATION:	**90 MINUTES**
WEIGHT :	**50:50**
TOTAL MARKS:	**50**

EXAMINERS	**: DR S EAGLETON**
MODERATOR	**: MRS P DE LANGE-JACOBS**
NUMBER OF PAGES	**: 3 PAGES**

INSTRUCTIONS:	**YOU MAY KEEP THE QUESTION PAPER**
REQUIREMENTS:	**1 x EXAMINATION SCRIPT**

Answer this section in the answer book provided. Number the questions exactly as they are number on the question paper. **Keep subsections of questions together**.

QUESTION 1

1.1 Describe skeletal muscle contraction from the moment the impulse is propagated down the T-tubule until the muscle relaxes. 16 x ½ = (8)

1.2.1 Define a motor unit. (1)

1.2.2 How do motor units vary to meet the needs of different muscle groups? (1)

[10]

QUESTION 2

2.1 A neuron stimulates a skeletal muscle at a neuromuscular junction. Describe the events in this cholinergic synapse, from the arrival of the impulse until it is propagated into the muscle fibre. 10 x ½ = (5)

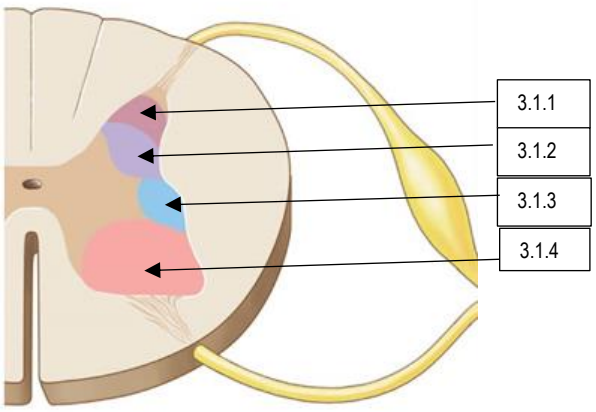
2.2 Explain the events that will lead to the generation of an action potential. (3)

2.3 Name two events that occur at + 30 mV during the generation of an action potential. (2)

[10]

QUESTION 3

3.1 Use the diagram below to identify the numbered functional regions of the spinal cord (½). For each region identified outline its function (1). 4 x 1½ = (6)



3.2 Mary accidentally touches the hot stove plate. Describe her reflex response to this unfortunate event.(4)

[10]

QUESTION 4

4.1 MATCHING. Choose the item in column 2 that best matches each item in column 1. Each option can be used more than once or not at all. Write the number from column 1 and the correct option selected from column 2 in your answer book. 6 x ½ = (3)

Column 1	Column 2
2.2.1 Auditory area	occipital lobe
2.2.2 Primary sensory cortex	pyramidal tract
2.2.3 Somatic motor cortex	temporal lobe
2.2.4 Motor speech area	parietal lobe
2.2.5 Premotor area	frontal lobe
2.2.6 Visual area	basal nuclei
	corticospinal tract
	interbrain
	midbrain

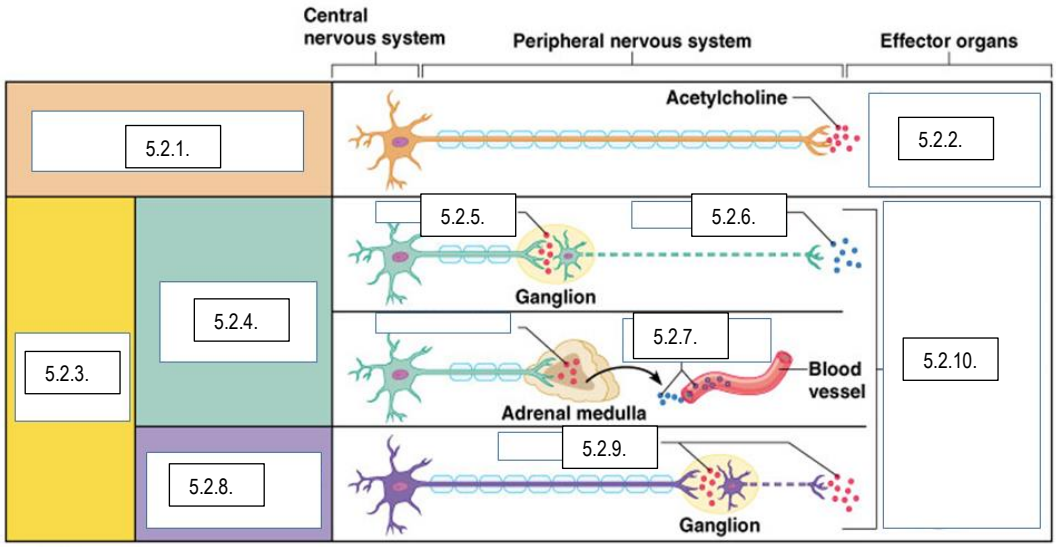
4.2 The medulla oblongata is one of the smallest sections of the brain, yet damage to it can cause death, whereas similar damage to the cerebrum might go unnoticed. Explain why. (2)

[5]

QUESTION 5

5.1 Give **five** responses to increased sympathetic activity (½) and give a reason why each one is important (½). 10 x ½ = (5)

5.2 Provide the annotations for the numbered blanks of the diagram below. 10 x ½ = (5)



[10]

QUESTION 6

6.1 Explain photoreception in the eye. 10 x ½ = (5)

[5]

Total = 50