

SIR ARTHUR LEWIS COMMUNITY COLLEGE

DIVISION OF AGRICULTURE

END OF SEMESTER ONE EXAMS

CERTIFICATE IN GENERAL AGRICULTURE

**ANIMAL STUDIES- ANS 104**

Duration: 2 ½ hrs



Date: 11<sup>th</sup> December, 2017

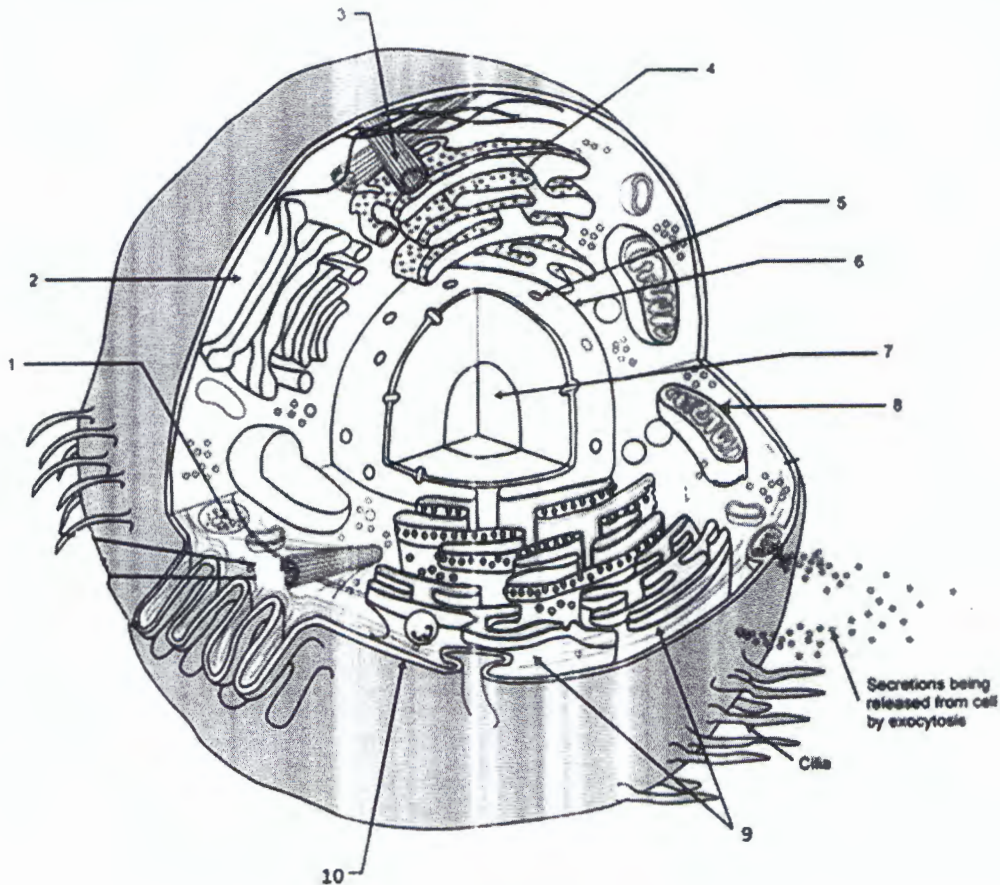
Time: 9 :00 a.m.

**DIRECTIONS:** This paper consists of **FIVE (5) COMPULSORY** questions. The mark for each part of a question is indicated in brackets next to each question.

**ANIMAL CELL AND CELL CYCLE**

1. The cell is considered to be the basic unit of all life. The following questions all refer to animal cells.

- a. Complete the following diagram of an animal cell by correctly labelling the parts indicated by NUMBERS 1-10. [10 marks]



- b. State ONE function of EACH part identified above. [10 marks]

- c. The **cell cycle** may be defined as the sequence of growth and reproduction of somatic and germline cells.

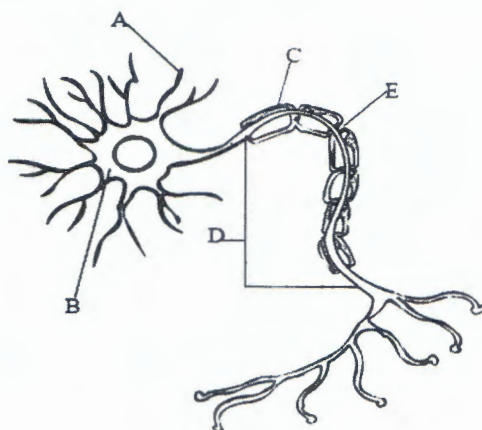
Each of the sentences below describes a phase of a **GERMLINE** cell cycle.

Complete the sentences by naming the stage of the cell cycle described in each. A stage may be used more than once. [10 marks]

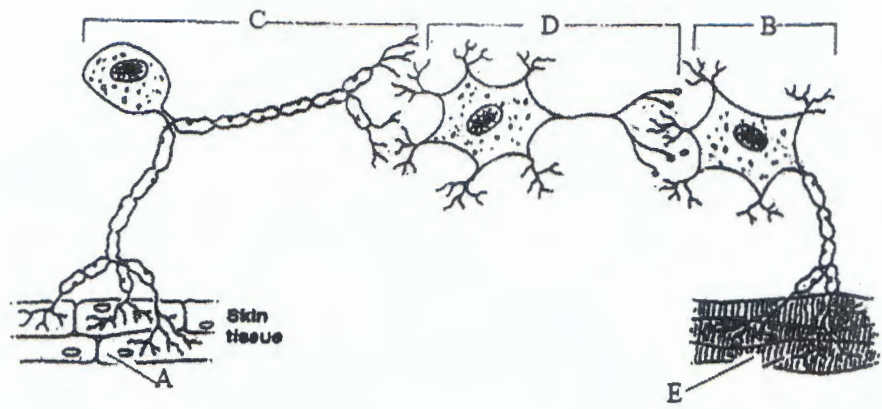
- i. In \_\_\_\_\_ the sister chromatids are moving apart.
- ii. In \_\_\_\_\_ a new nuclear membrane is forming around the two homologous pairs of chromosomes.
- iii. In \_\_\_\_\_ the cytoplasm of the cell divides.
- iv. In \_\_\_\_\_ the homologous pairs of chromosomes are located at the equator of the cell.
- v. Crossing over occurs in \_\_\_\_\_.
- vi. The homologous pairs are pulled to opposite poles of the cell in \_\_\_\_\_.
- vii. Spindle fibres are formed in \_\_\_\_\_.
- viii. DNA is replicated in \_\_\_\_\_.
- ix. Four haploid daughter cells are formed in \_\_\_\_\_.
- x. This phase occurs in three stages G1, S and G2 \_\_\_\_\_.

### NERVOUS SYSTEM

2. An animal's nervous system is made up of specialized cells called neurons.
- a. The following diagram represents one type of neuron. Complete the diagram by correctly labelling the parts. [5 marks]



- b. State one function of EACH part identified in a. above. [5 marks]
- c. The diagram below represents the structure of a somatic reflex. Letters A to E have been used to represent the different structures involved in this process.



- d. What is the name given to the basic structure of a reflex? [1 mark]
- e. Correctly identify the structures represented by EACH letter (A-E). [5 mark]
- f. State the function of each in the named process. [5 mark]

**3. ENDOCRINE SYSTEM**

- a. Copy and complete the following table comparing the endocrine and nervous systems. [10]

Characteristic	Endocrine system	Nervous system
General function		
Reaction to stimuli		
Duration of effects		
Chemical messenger		
Target tissues		

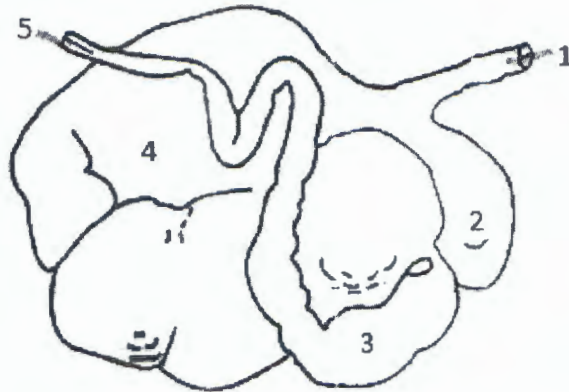
- b. Copy and complete the following table that relates to endocrine glands, their hormones and hormone function in an animal's body. [10 marks]

Endocrine gland	Hormone	Function
	Growth hormone	
	Luteinizing hormone	
	Oxytocin	
	Epinephrine and norepinephrine	
	Testosterone	

#### 4. DIGESTIVE SYSTEM

a. The following diagrams illustrate the digestive systems of three different types of animals.

i. Complete the diagrams by correctly identifying each structure indicated by numbers 1 to 5 on each diagram. [15 marks]



b.

DIAGRAM A

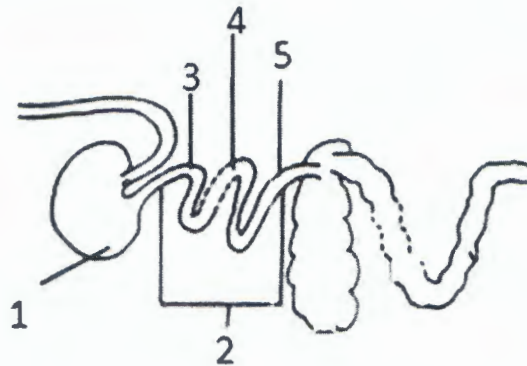


DIAGRAM B

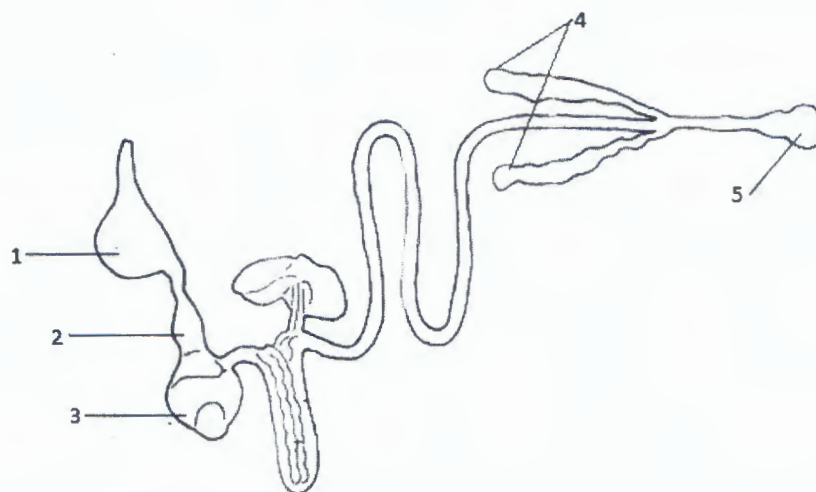


DIAGRAM C

c.

ii. Name an animal with each type of digestive system illustrated above. [3 marks]

d. Briefly explain how digestion occurs in ANY TWO (2) of the animals named above. [10 marks]

[10 marks]

5. Tissues - Complete the following concept map which relates to animal tissues [23marks]

