

SIR ARTHUR LEWIS COMMUNITY COLLEGE

DIVISION OF AGRICULTURE

END OF SEMESTER ONE EXAMS

CERTIFICATE IN GENERAL AGRICULTURE

#A57

ANIMAL STUDIES- ANS 104

Date: 11th December, 2012

Duration: 2 ½ hrs

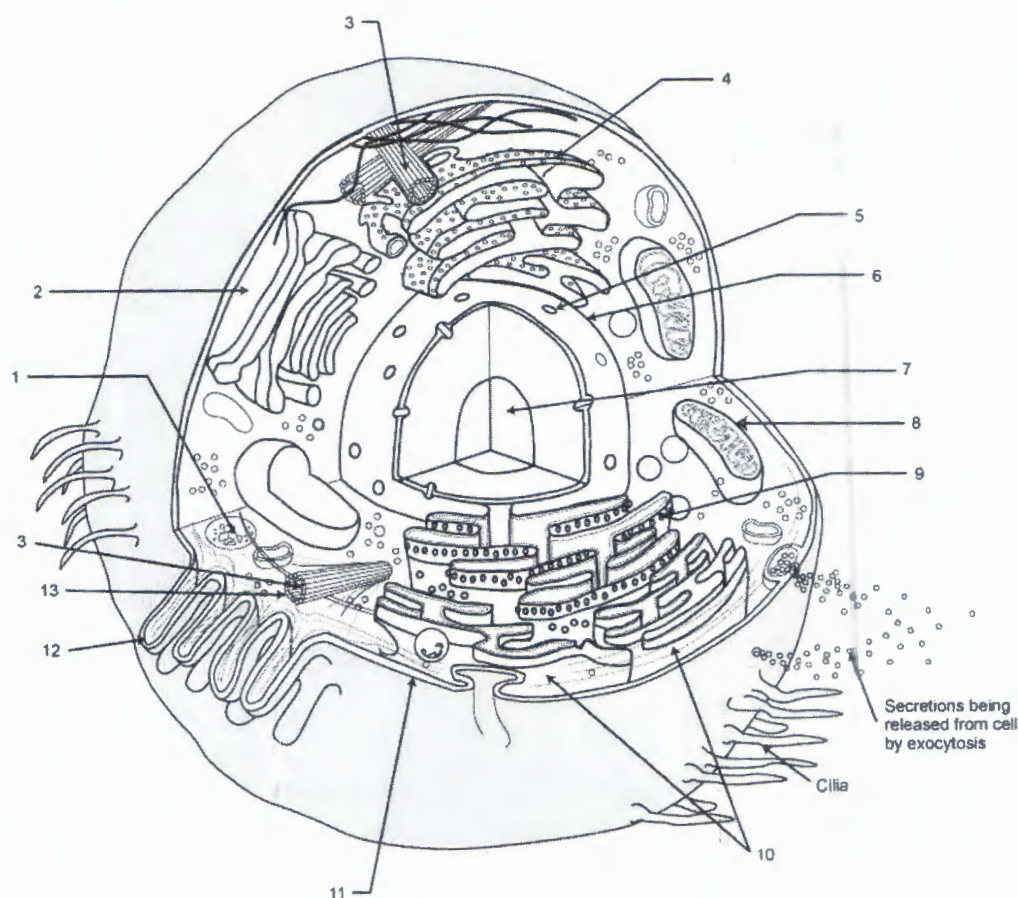
**READ ALL INSTRUCTIONS CAREFULLY BEFORE
BEGINNING THE PAPER**

1. Ensure that ALL personal electronic devices are switched off for the duration of this exam.
2. This paper consists of TWO sections, Sections A and B.
3. Section A consists of 30 Multiple Choice questions, and Section B consists of three short answer type questions.
4. Instructions for EACH section are written at the beginning of that section.
5. You are to answer **ALL** questions on the paper provided.
6. Answer **EACH** question on a separate sheet of paper.

SECTION A

This section consists of 30 multiple choice questions. You are to answer ALL questions. Indicate your answer by SHADING the letter which corresponds to that answer on the answer sheet provided. Each question is worth 1 mark.

QUESTIONS 1-5 REFER TO THE DIAGRAM OF A TYPICAL ANIMAL CELL WHICH FOLLOWS



1. The part labelled 8 is the:

a. Nuclear membrane	b. mitochondrion
c. nucleus	d. ribosome

2. The part labelled 10 is the:

a. Golgi apparatus	b. rough endoplasmic reticulum
c. smooth endoplasmic reticulum	d. centriole

3. The part labelled 2 is the:

a. Golgi apparatus	b. smooth endoplasmic reticulum
c. centriole	d. ribosome

4. The part labelled 7 is the:

a. Nuclear membrane	b. nucleolus
c. nucleus	d. ribosome

5. The part labelled 1 is the:

a. Lysosome	b. vacuole
c. centriole	d. ribosome

6. Of the following organelles, which group is involved in manufacturing substances needed by the cell?

a. lysosome, vacuole, ribosome	b. ribosome, rough ER, smooth ER
c. vacuole, rough ER, smooth ER	d. smooth ER, ribosome, lysosome

7. Ribosomes are found
 - a. only in the nucleus
 - b. in the cytoplasm
 - c. attached to the smooth endoplasmic reticulum
 - d. both b and c

8. This cell structure modifies, packages, and distributes proteins destined for secretion or intracellular use.
 - a. Golgi apparatus
 - b. Lysosomes
 - c. Ribosomes
 - d. Mitochondria

9. To enter or leave a cell, substances must pass through
 - a. the Golgi apparatus.
 - b. a ribosome.
 - c. the nucleus.
 - d. the plasma membrane.

10. Which part of the cell controls the activities inside the cell?
 - a. Cytoplasm
 - b. Nucleus
 - c. Cell membrane
 - d. Cell wall

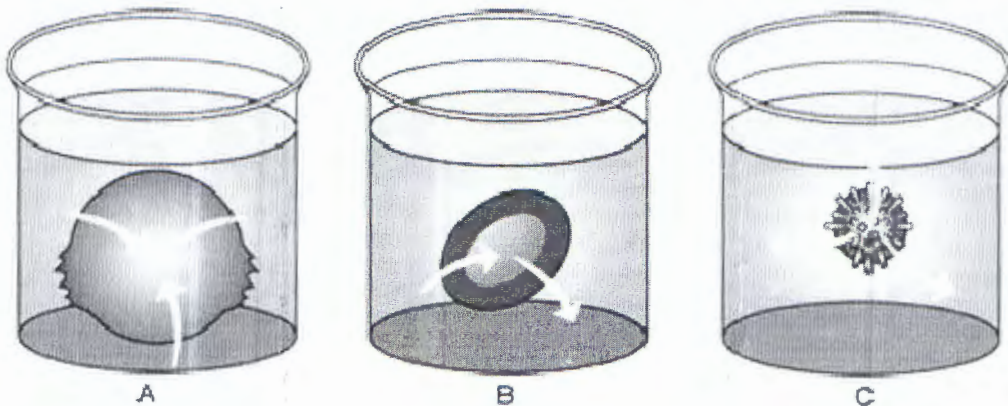
11. Which activity requires no energy expenditure?

a. Endocytosis	b. Phagocytosis
c. Active transport	d. Facilitated diffusion

12. Which activity requires energy expenditure?

a. Facilitated diffusion	b. Osmosis
c. Active transport	d. Diffusion

Questions 13-16 refer to the following diagrams which show the effects of a cell membrane process on animal cells.



13. Which cell membrane process is illustrated above?

a. Diffusion	b. Exocytosis
c. Osmosis	d. Filtration

14. What type of solution is represented by letter A?

a. Isotonic	b. Hypertonic
c. Hypotonic	d. Isotonic

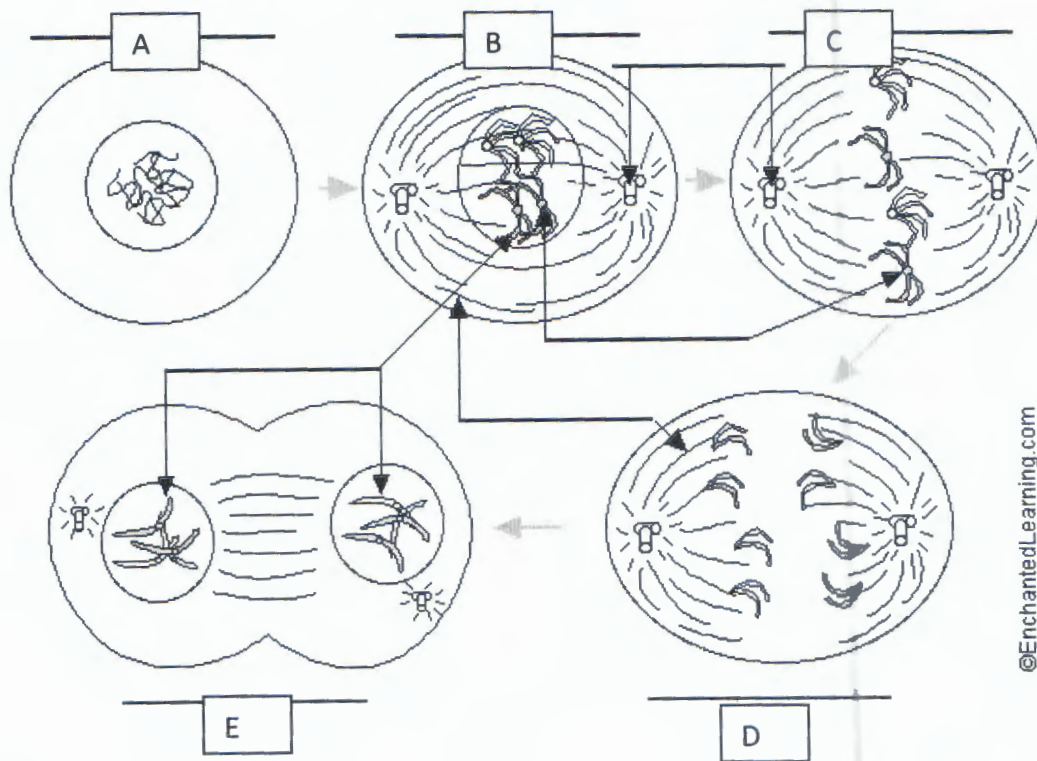
15. What type of solution is represented by letter B?

a. Isotonic	b. Hypertonic
c. Hypotonic	d. Isotonic

16. What type of solution is represented by letter C?

a. Isotonic	b. Hypertonic
c. Hypotonic	d. Isotonic

Questions 17-21 refer to the following diagram which represents the cell cycle of a somatic cell.



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17.

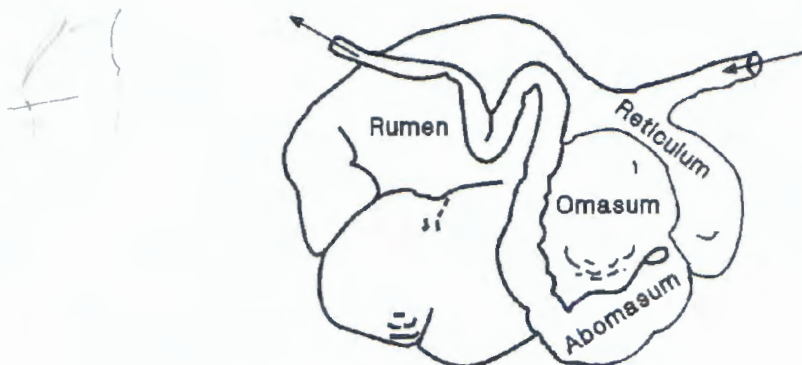
17. Letter A represents;
- | | |
|--------------|---------------|
| a. Prophase | b. Metaphase |
| c. Telophase | d. Interphase |
18. Letter B represents:
- | | |
|--------------|--------------|
| a. Telophase | b. Metaphase |
| c. Prophase | d. Anaphase |
19. Letter C represents:
- | | |
|--------------|---------------|
| a. Metaphase | b. Interphase |
| c. Telophase | d. Prophase |
20. Letter D represents:
- | | |
|---------------|--------------|
| a. Anaphase | b. Metaphase |
| c. Interphase | d. Telophase |
21. Letter E represents:
- | | |
|--------------|--------------|
| a. Prophase | b. Metaphase |
| c. Telophase | d. Anaphase |
22. Reproductive cells divide via a process known as:
- | | |
|---------------|--------------------------|
| a. Interphase | b. Mitosis |
| c. Meiosis | d. somatic cell division |
23. Which phase of mitosis could be called the metabolic phase?
- | | |
|---------------|------------------|
| a. Interphase | b. mitotic phase |
| c. Prophase | d. Telophase |
24. The end of telophase is marked by:
- | | |
|--------------|----------------|
| a. Metaphase | b. Cytokinesis |
| c. Anaphase | d. Prophase |
25. The somatic cell is actively dividing during this phase:
- | | |
|------------------|---------------|
| a. mitotic phase | b. Interphase |
| c. Meiosis | d. G1 and G2 |
26. The four stages of mitosis in the correct sequence are:
- | |
|---|
| a. prophase, anaphase, metaphase, telophase |
| b. prophase, metaphase, telophase, anaphase |
| c. interphase, anaphase, telophase, metaphase |
| d. prophase, metaphase, anaphase, telophase |

27. Chromosomes contain:
a. cells
b. organelles
c. genes and genetic information
d. zygotes
28. The last phase of meiosis is:
a. metaphase II
b. anaphase I
c. telophase I
d. telophase II
29. Crossing over is when chromosomes:
a. form sister chromosomes
b. replicate
c. exchange DNA strands
d. split
30. Haploid cells are formed by:
a. mitosis
b. meiosis
c. cytokinesis
d. growth

SECTION B

This section consists of THREE questions, you MUST answer ALL questions. The marks allocated to each part of a question are indicated in brackets at the end of each question.

1. (a) Give **THREE (3)** functions of the digestive tract. (3mks)
 (b) What structure does the following diagram represent? (1mk)



- (b) Correctly name the parts labelled A-F. (6mks)
 (c) Explain the process of digestion in the stomach of a goat. (10 mks)

2. (a) A list of terms has been provided below. Match the descriptions in the table below with the terms in the list provided on your answer sheet. (11mks)

Synapse, Axon, Myelin sheath, Nerve impulse, Sense receptor, Response, Reflex, Cell body, Dendrite, Neurotransmitter, Axon terminal

- (b) Neurons are the basic functional units of the nervous system. Name the different types of neurons. (3 mks)
 (c) Differentiate among the types of neurons listed above. (6 mks)
 (d) Draw and clearly label ONE type of neuron named above. (5 mks)
3. (a) Give **ONE** way in which the endocrine system is similar to the nervous system and ONE ways in which they are different. (2 mks)
 (b) You have been given a list of endocrine glands on your answer sheet. Use the information given here to complete the table on your answer sheet. (That is, in the spaces provided on the answer sheet, write the hormone produced in each gland and the function of that hormone) (18 marks)

HORMONE
Follicle Stimulating hormone
Testosterone
Insulin
Progesterone
Thyroxine
Growth hormone
Antidiuretic hormone
Parathyroid hormone
Melatonin

FUNCTION
Controls blood glucose levels.
Prepares the lining of the uterus for pregnancy.
Stimulates the growth of long bones.
Stimulates development of the ovarian follicle.
Influences sexual development and breeding cycles.
Influences growth and development of young animals.
Regulate blood calcium levels.
Stimulates the development of the male sexual characteristics.
Stimulates absorption of water from the kidney tubule

ANSWER SHEET

2. (a)

Term	Function
	1. The long fibre that carries the nerve impulses.
	2. The connection between adjacent neurons.
	3. The chemical secreted into the gap between neurons at a synapse.
	4. A rapid automatic response to a stimulus.
	5. The covering of fatty material that speeds up the passage of nerve impulses.
	6. The structure at the end of an axon that produces neurotransmitters to transmit the nerve impulse across the synapse.
	7. The high speed signals that pass along the axons of nerve cells.
	8. The branching filaments that conduct nerve impulses towards the cell.
	9. The sense organ or cells that receive stimuli from within and outside the body.
	10. The reaction to a stimulus by a muscle or gland.
	11. The part of the nerve cell containing the nucleus.

3. (a)

ENDOCRINE GLAND	HORMONE	FUNCTION
Parathyroid gland		
Anterior Pituitary		
Anterior Pituitary		
Corpus luteum		
Thyroid		
Pancreas		
Posterior pituitary		
Pineal gland		
Testes		