



UNIVERSITY OF SWAZILAND

2nd SEM. 2015/2016

FINAL EXAMINATION PAPER

PROGRAMME: All BSc. YEAR I

COURSE CODE: ASC 104

TITLE OF PAPER: ZOOLOGY

TIME ALLOWED: TWO (2) HOURS

**INSTRUCTIONS: CHOOSE ANY FOUR (4) QUESTIONS
WRITE YOUR ANSWERS ON THE ANSWER BOOKLET.**

**DO NOT OPEN THIS PAPER UNTIL PERMISSION HAS BEEN GRANTED
BY THE CHIEF INVIGILATOR**

QUESTION 1**Choose and Write the Letter of the Correct Answer:****(2.0 Marks Each)**

1. Cardiac muscles are
 - a. striated, syncytial and voluntary
 - b. striated, cross connected and involuntary
 - c. striated, syncytial and involuntary
 - d. smooth, spindle shaped and involuntary

2. Which one is not a feature of smooth muscles?
 - a. They are spindle shaped
 - b. Form contractile walls of tubular organs
 - c. Their contractions are smooth, slow and involuntary
 - d. Their contractions are strong and voluntary

3. Cardiac sphincter muscle is a circular band of
 - a. cardiac muscles
 - b. smooth muscles
 - c. striated muscles
 - d. none of these

4. Skeletal muscle fibres are held together by
 - a. adipose tissue
 - b. white fibrous tissue
 - c. yellow fibrous tissue
 - d. reticular connective tissue (endomysium)

5. Non - nucleated muscles are
 - a. smooth muscles
 - b. skeletal muscles
 - c. cardiac muscles
 - d. none of these

6. Myofibrils show dark and light bands in
 - a. cardiac muscles
 - b. skeletal muscles
 - c. cardiac muscles and unstriated muscles
 - d. cardiac muscles and skeletal muscles
7. Primary Bundles of skeletal muscle fibres are enclosed in
 - a. periosteum
 - b. epimysium
 - c. endocardium
 - d. perimysium
8. Which of these cells are **NOT** associated with bone tissue.
 - a. osteocytes
 - b. osteoblasts
 - c. osteoclasts
 - d. megakaryocytes
9. Which of these is **NOT** a tubular organ present in the abdominal cavity?
 - a. the small intestine
 - b. the true stomach
 - c. the uterus
 - d. the heart
10. Which of these is **NOT** a characteristics of compact organs outside body cavities?
 - a. they are covered with an organ capsule made of connective tissue, adventitia
 - b. they are made of lobules, lobes, trabeculae
 - c. they are called parenchymatous organs
 - d. they have a covering epithelial layer

11. The cartilage required for repair of damaged nose is:

- a. fibrous cartilage
- b. elastic cartilage
- c. hyaline cartilage
- d. calcified cartilage

Write True OR False on the answer script.

12. The formation of erythrocytes in mammalian foetus and adult takes place in liver and spleen, red bone marrow.

(1.0 Mark)

13. Mature erythrocytes of cattle, sheep goats have no nuclei, they are biconcave, contain iron and haemoglobin, carry oxygen, do not live for more than 120 days, and are not capable of multiplying.

(1.0 Mark)

14. Both Lymphocytes and Monocytes have a kidney shaped nuclei which occupy most part of the cytoplasm, and they have no specific cytoplasmic granules.

(1.0 Mark)

QUESTION 2

Choose and Write the Letter of the Correct Answer:

(2.0 Marks Each)

1. Somatotrophic hormone is also called

- a. Prolactin
- b. Thyroxine
- c. Luteinizing hormone
- d. Growth hormone

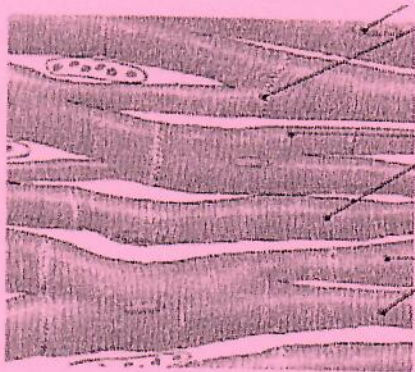
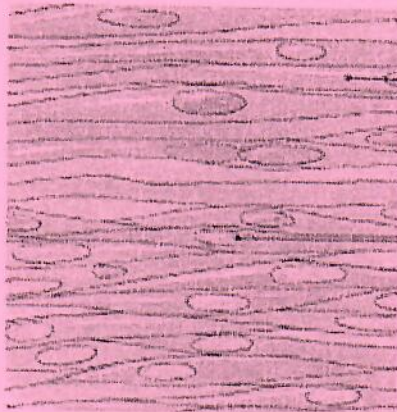
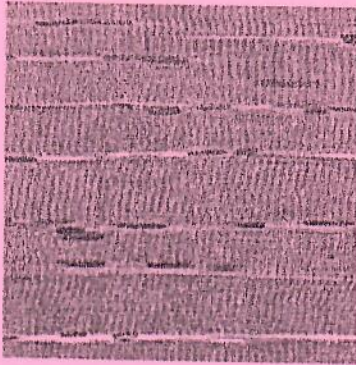
2. Gene mutation takes place in

- a. Mitochondria
- b. Ribosomes
- c. Deoxyribose Nucleic Acid
- d. Chloroplast

3. The Pituitary gland in the animal body is an example of
 - a. Exocrine gland
 - b. Compound saccular gland
 - c. Endocrine gland
 - d. Skin gland
4. The largest living animals belong to the group of
 - a. Fishes
 - b. Reptiles
 - c. Mammals
 - d. Birds
5. Glucose is stored in the body of animals in the form of
 - a. Insulin
 - b. Glycogen
 - c. Amino acids
 - d. Fat
6. "Sex-linked genes" refer to genes:
 - (a) present in a particular sex
 - (b) controlling secondary sexual characters
 - (c) controlling both primary and secondary sexual characters
 - (d) present on the sex chromosomes
7. Insertion or deletion of a nucleotide in a class of mutation resulting in a sequence of codon that makes nonsensical polypeptide chain is called:
 - (a) translocation
 - (b) inversion
 - (c) chromosome mutation
 - (d) lethal mutation

8. Cancer causing genes are called:
- (a) operons
 - (b) oncogenes
 - (c) recons
 - (d) mutons
9. Which one of the following enzymes is not proteinacious in nature?
- (a) Rennin
 - (b) Ribozyme
 - (c) Pepsin
 - (d) Trypsin
10. Which enzyme catalyzes the unwinding of DNA helix during replication?
- (a) Primase
 - (b) Topoisomerase
 - (c) DNA-polymerase
 - (d) Helicase
11. If a mutation occurs in a gamete it would influence:
- (a) a particular sex of the progeny, whose gamete has mutated
 - (b) a single individual
 - (c) all successive generation of the parents
 - (d) sterility in the progeny

12) Identify all three(3) tissues shown in the Figure below. (3.0Marks)



QUESTION 3**Choose and Write the Letter of the Correct Answer:****(2.0 Marks Each)**

1. Bone marrow occurs in
 - a. cartilage
 - b. flat bones
 - c. ovaries
 - d. neurons

2. Regeneration of cartilage can occur from its
 - a. plasma
 - b. matrix
 - c. perichondrium
 - d. piece without perichondrium

3. Cartilage present in trachea, larynx and bronchi is
 - a. fibrous
 - b. elastic
 - c. hyaline
 - d. calcified

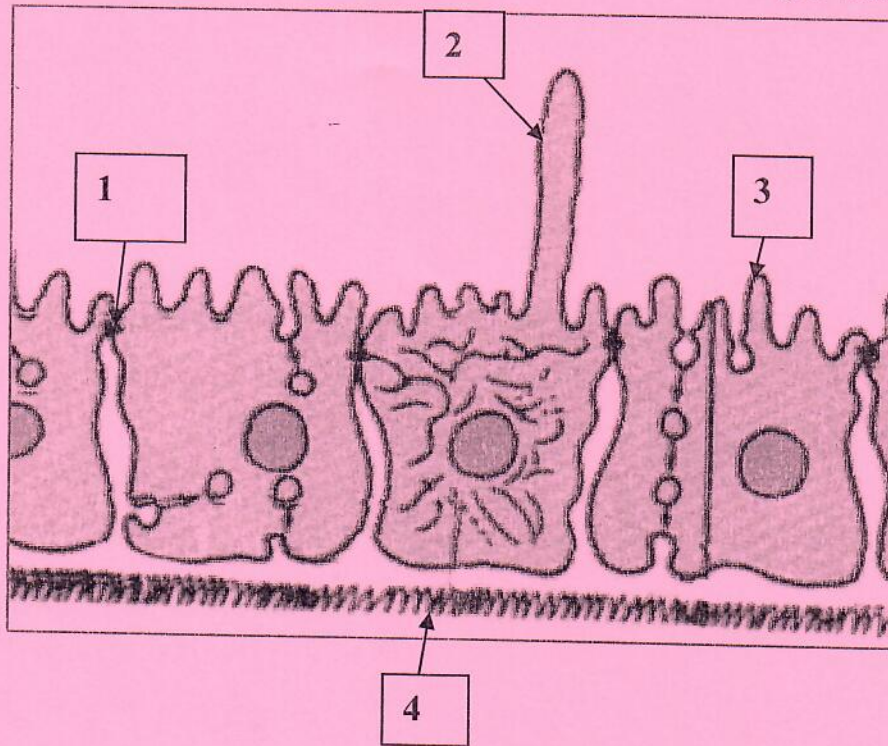
4. Which one is **NOT** a function of adipose tissue?
 - a. Helps in insulation.
 - b. Helps in mechanical protection.
 - c. Acts as energy store.
 - d. Helps in destroying bacteria or germs.

5. Tendons (dense regular connective tissue) joins
 - a. fat body with muscles
 - b. integuments with muscles
 - c. muscles with bones or cartilage
 - d. none of the above

6. Ligament connect
 - a. organs to muscles
 - b. smooth muscle to skeletal muscles
 - c. neurons to skin
 - d. bones to bone
7. Macrophages develop from
 - a. areolar tissue
 - b. adipose tissue
 - c. monocytes
 - d. lymphocytes
8. Membrane lining the marrow cavity
 - a. endosteum
 - b. periosteum
 - c. pericardium
 - d. perichondrium
9. Which of the following is **NOT** part of a bone
 - a. keratin
 - b. bone lamella
 - c. haversian canals
 - d. canaliculi
10. Resorption of bone is carried out by
 - a. osteoclasts
 - b. osteoblasts
 - c. osteoprogenitors
 - d. none of these
11. The structure of tubular organs is composed of
 - a. serosa or mesothelium
 - b. smooth muscle
 - c. connective tissue
 - d. all of the above

12. Identify the structures labelled 1 to 4

(3.0 Marks)



QUESTION 4

You are approached by a farmer asking you to explain to him/her the following questions. Explain giving examples to illustrate your answers.

- i. Why and how an animal like a Polar Bear exist only in cold climate regions like the North pole and not in Southern Africa. (5.0 Marks)
- ii. What is the scientific explanation for frogs, crocodiles, chicken and man to have five(5) digits in the pentadactyl limb? (5.0 Marks)
- iii. What evolutionary evidence is available to support the question of how living organisms became what they are and to exist where they are today. (15.0 Marks)

QUESTION 5

- a) State four (4) possible reasons for a Red blood cell to appear to be nucleated when examined under a Microscope. (4.0 Marks)
- b) List the main causes of Anaemia. (4.0 Marks)
- c) Describe the functions of blood. (8.0 Marks)
- d) List all the anatomical structures of female Gonads in chickens. (4.0 marks)
- e) Explain the reasons why avian testicles are softer than mammalian testicles. (2.0 Marks)
- f) List the inner regions of an avian ovary. What type of a gland is an avian ovary? (3.0 Marks)