



**MASINDE MULIRO UNIVERSITY OF  
SCIENCE AND TECHNOLOGY  
(MMUST)**

**MAIN CAMPUS**

**UNIVERSITY EXAMINATIONS  
2018/2019 ACADEMIC YEAR**

**MAIN PAPER**

**FOR THE DEGREE  
OF  
BACHELOR OF MEDICAL LABORATORY SCIENCES (DIRECT ENTRY AND  
UPGRADING)**

**COURSE CODE: BML 122**

**COURSE TITLE: SYSTEMIC ANATOMY**

**DATE: 30<sup>TH</sup> MAY 2019**

**TIME: 8.00 -10.00 AM**

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**INSTRUCTIONS TO CANDIDATES**

This paper is divided into three sections, **A B** and **C**, carrying respectively: Multiple Choice Questions (**MCQs**), Short Answer Questions (**SAQs**) and Long Answer Questions (**LAQs**). **ANSWER ALL QUESTIONS**

MMUST observes ZERO tolerance to examination cheating

This Paper Consists of 4 Printed Pages. Please Turn Over

## **SECTION A**

1. Neurons arise from embryonic
  - a. endoderm.
  - b. ectoderm.
  - c. mesoderm.
  - d. mesenchyme.
  
2. The glial cells that guide migrating neurons in the developing fetal brain are
  - a. astrocytes.
  - b. oligodendrocytes.
  - c. satellite cells.
  - d. ependymal cells.
  
3. Nerves that directly control the motility of the stomach or rate of the heartbeat would belong to
  - a. the somatic sensory division.
  - b. the somatic motor division.
  - c. the visceral motor division.
  - d. the visceral sensory division
  
4. The ductus deferens develops from the \_\_\_\_\_ of the embryo.
  - a. urogenital folds
  - b. paramesonephric duct
  - c. Mesonephric duct
  - d. labioscrotal folds
  
5. Descent of the testes includes their passage through
  - a. the inguinal canal.
  - b. the spermatic cord.
  - c. the ductus deferens.
  - d. the seminiferous tubule.
  
6. The narrowest part of the uterus is
  - a. the fundus.
  - b. the infundibulum.
  - c. the body.
  - d. the cervix.
  
7. The vesicouterine pouch is a space in the peritoneal cavity between the uterus and
  - a. the fornices.
  - b. the uterine tube.
  - c. the sacrum.
  - d. the urinary bladder.

8. In the spinal cord, the somas of the lower motor neurons are found in  
a. the cauda equina.  
b. the dorsal horns.  
c. the ventral horns.  
d. the dorsal root ganglia.

9. Between the dura mater and vertebral bone, one is most likely to find  
a. arachnoid mater.  
b. denticulate ligaments.  
c. cartilage.  
d. adipose tissue.

10. All somatic reflexes share all of the following properties *except*  
a. they are quick.  
b. they are monosynaptic.  
c. they require stimulation.  
d. they are involuntary.

11. These are some of the points that the blood passes as it circulates through the heart chambers, listed alphabetically: (1) left atrium, (2) left ventricle, (3) mitral valve, (4) pulmonary valve, (5) right atrium, (6) right ventricle, (7) tricuspid valve. Place these in the correct order from the time that blood enters the heart from the venae cavae to the time blood leaves the heart by way of the aorta.  
a. 1-3-2-4-5-7-6  
b. 1-2-3-5-7-6-4  
c. 5-7-6-4-1-3-2  
d. 6-7-5-4-2-3-1

12. Which of these is *not* characteristic of the heart in old age?  
a. ventricular enlargement  
b. thickening of the atrial walls  
c. a less elastic fibrous skeleton  
d. fewer cells in the conduction system

13. A circulatory pathway in which the blood flows through two capillary beds in series before it returns to the heart is called  
a. an arteriovenous anastomosis.  
b. a portal system.  
c. a venous anastomosis.  
d. a venous return pathway.

14. All of the following blood vessels except \_\_\_\_\_ are located in the upper limb.  
a. the small saphenous vein  
b. the cephalic vein  
c. the brachial artery  
d. the circumflex humeral arteries

15. Lymph nodes tend to be especially concentrated in all of these sites *except*

- a. the cervical region.
- b. the popliteal region.
- c. the carpal region.
- d. the inguinal region.

16. A deficiency of pulmonary surfactant is most likely to cause

- a. chronic obstructive pulmonary disease.
- b. atelectasis.
- c. pneumothorax.
- d. chronic bronchitis.

17. The tissue layer between the muscularis mucosae and muscularis externa of the digestive tract is

- a. the mucosa.
- b. the lamina propria.
- c. the serosa.
- d. the submucosa.

18. Which of the following is a periodontal tissue?

- a. dentine
- b. enamel
- c. cementum
- d. gingiva

19. Which of the following cells secrete digestive enzymes?

- a. chief cells
- b. mucous neck cells
- c. parietal cells
- d. enteroendocrine cells

20. Which of these lies closest to the renal cortex?

- a. the parietal peritoneum
- b. the renal fascia
- c. the renal capsule
- d. the perirenal fat

### **SECTION B**

21. Describe the microscopic structure of the stomach (8mks)
22. a). State the functions of blood vessels (4mks)  
b). What is an **aneurysm** and what are its causes and effects? (4mks)
23. Briefly describe the structure of the ovaries (8mks)
24. Write a brief note on the development of the kidneys (8mks)
25. Describe the structure and function of the conducting portion of the bronchial tree (8mks)

### **SECTION C**

26. Describe the development, structure and arrangement of the chambers of the heart. (20mks)
27. Write a note on the differentiation of male and female reproductive systems, noting homologies between the two. (20mks)