



TECHNICAL UNIVERSITY OF MOMBASA

Department of Medical Sciences
UNIVERSITY EXAMINATION FOR:
BACHELOR OF SCIENCE MEDICAL LABORATORY SCIENCE
AML 4205: HUMAN ANATOMY II
END OF SEMESTER EXAMINATION
SERIES: DECEMBER 2016
TIME: 2 HOURS
DATE: Pick Date Select Month Pick Year

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of two sections. Attempt all the questions as instructed

Circle the correct answer in section A.

Section A

- In vision, light passing through the _____ is refracted and projected onto the _____.
 - Vitreous chamber, cornea
 - Retina, lens
 - Lens, retina
 - Lens, cornea
 - Retina, cornea
- The process of taking food into the digestive system is known as:
 - Ingestion
 - Propulsion
 - Digestion
 - Elimination
 - Deglutition
- Glucagon is produced in the pancreas by which cells?
 - Alpha cells
 - Beta cells
 - Delta cells
 - F cells
 - Goblet cells
- A lack of or decrease in insulin hormone receptors on cells can result in:
 - Diabetes insipidus
 - Type 1 diabetes mellitus

- c. Type 2 diabetes mellitus
 - d. Juvenile diabetes
 - e. All of the above
5. Name the arteries and veins facilitating blood flow to and from the lower limbs
- a. Brachial
 - b. Carotid
 - c. Femoral
 - d. Mesenteric
 - e. Coronary
6. Blood flows out of the ventricles when:
- a. the atrio-ventricular valves are open
 - b. the semi-lunar valves are open
 - c. the bicuspid valves are open
 - d. the mitral valves are closed
 - e. the semilunar valves are closed
7. Divisions of the systemic circulation are usually named according to:
- a. cells that make them up
 - b. bones they supply
 - c. tissues/organs they supply
 - d. people who first identified them
 - e. the order in which they were first described
8. The pharynx is divided into how many sub-divisions?
- a. 2
 - b. 3
 - c. 4
 - d. 5
 - e. 6
9. Intrinsic factor is produced by which cells within the stomach?
- a. mucous cells
 - b. chief cells
 - c. enteroendocrine cells
 - d. parietal cells
 - e. Alpha cells
10. Through which arteriole does blood exit the glomerular capsule?
- a. afferent
 - b. efferent
 - c. renal
 - d. interlobular
 - e. glomerular
11. Which of the following structures is not part of the nephron?
- a. the calyx
 - b. the distal convoluted tubule
 - c. the ascending loop of Henlé
 - d. the collecting duct

e. Bowman's capsule

12. Which of the following acts as the filtration apparatus of the kidneys?

a. the descending loop of Henlé

b. the glomerular capsule

c. the collecting duct

d. the renal pelvis

e. vasa recta

13. Vibrations are transferred through the ear in which order?

a. Stapes, incus, malleus, tympanic membrane, cochlea

b. Malleus, incus, stapes, tympanic membrane, cochlea

c. Tympanic membrane, malleus, incus, stapes, cochlea

d. Tympanic membrane, incus, stapes, malleus, cochlea

e. Tympanic membrane, stapes, malleus, incus, cochlea

14. The flow of blood through the heart and pulmonary circulation occurs in which sequence?

a. Left atrium, mitral valve, left ventricle, aortic valve, right atrium, tricuspid valve, right ventricle, pulmonary valve

b. Right atrium, tricuspid valve, right ventricle, pulmonary valve, pulmonary circulation, left atrium, bicuspid valve, left ventricle, aortic valve

c. Aortic valve, right ventricle, mitral valve, right atrium, superior vena cava

d. Right atrium, left atrium, mitral valve, right ventricle, left ventricle, tricuspid valve, pulmonary circulation, pulmonary valve, aorta

e. Right atrium, mitral valve, right ventricle, pulmonary valve, pulmonary circulation, left atrium, tricuspid valve, left ventricle, aortic valve

15. The layer of the heart wall primarily responsible for the heart's pumping action is the:

a. Myocardium

b. Endocardium

c. Epicardium

d. Pericardium

e. left ventricular wall

16. The superior and inferior mesenteric arteries primarily supply:

a. The lungs

b. The stomach

c. The intestines

d. The heart

e. The liver

17. Which parts of the pharynx are shared with the digestive system?

a. Nasopharynx, laryngopharynx

b. Oropharynx only

c. Oropharynx, nasopharynx

d. Oropharynx, laryngopharynx

e. Laryngopharynx only

18. The components of the lower respiratory system are:

a. Trachea, bronchi, bronchioles, lungs

b. Pharynx, larynx, trachea, lungs

c. Larynx, trachea, bronchi, lungs

d. Bronchi and lungs

e. Epiglottis, trachea, bronchi, lungs

19. The four layers of the digestive tract, from innermost to outermost, are the:

a. Mucosa, submucosa, muscularis, serosa

b. Serosa, muscularis, submucosa, mucosa

c. Submucosa, mucosa, muscularis, serosa

d. Muscularis, submucosa, serosa, mucosa

e. Mucosa, serosa, muscularis, submucosa

20. The main pancreatic duct empties into the duodenum at the same place as the:

a. Accessory pancreatic duct

b. Common bile duct

c. Common hepatic duct

d. Cystic duct

e. Hepatic canaliculi

21. Chyme passes from the small intestine into the large intestine through the _____ valve.

a. Pyloric

b. Cardiac

c. Duodenal

d. Ileocecal

e. Jejunal

22. Sperm are produced in the _____ and stored in the _____.

a. Epididymis, testes

b. Seminal vesicles, prostate

c. Testes, seminal vesicles

d. Testes, prostate

e. Testes, epididymis

23. A sperm cell's genetic information is contained in the _____.

a. Acrosome

b. Head

c. Midpiece

d. Tail

e. Both acrosome and head

24. Female sex cells develop in the _____ and are released into the _____.

a. Uterus, ovaries

b. Uterus, cervix

c. Ovaries, uterus

d. Ovaries, uterine tubes

e. Uterine tubes, uterus

25. The three sections of the male urethra, from innermost to outermost, are the:

a. Prostatic, membranous, spongy

b. Membranous, prostatic, spongy

c. Spongy, membranous, prostatic

d. Prostatic, spongy, membranous

e. Membranous, spongy, prostatic

26. Type II pneumocytes
- Develop from type I pneumocytes
 - Are macrophages
 - Are very flat and practically devoid of organelles
 - Metabolise surfactant
 - All the above
27. In a normal cardiac cycle
- Right atrial ejection precedes Left atrial ejection
 - Right ventricular contraction starts before Left ventricular contraction
 - Left ventricular ejection starts before Right ventricular ejection
 - Pulmonary valve closes before aortic valve
 - Aortic valve closes after pulmonary valve in expiration
28. Somatostatin released by the pancreas acts in what way when it affects the other cells of the pancreas?
- In an endocrine fashion
 - In an exocrine fashion
 - In an autocrine fashion
 - In a paracrine fashion
 - None of the above
29. What sort of space exists between the parietal and visceral pericardium?
- Essential
 - Absolute
 - Virtual
 - Virtuous
 - Vital
30. Which of the following muscles is also known as an accessory muscle?
- Diaphragm
 - Sternocleidomastoids
 - External Intercostals
 - Internal Intercostals
 - All the above

Section B

Question 31

- Explain** how the lungs are adapted to their functions (8 marks)
- Outline** the path followed by oxygen from the atmosphere to the heart tissue (12 marks)

Question 32

- Describe** the structure of the FIVE types of leukocytes and give the function of each type (10 marks)
- Explain** how the structure of capillaries enables them perform their functions (10 marks)