

091205T4PTT

PERIOPERATIVE THEATER TECHNOLOGY 5

HE/OS/TT/CC/01/5/A

Demonstrate the Knowledge of Human Anatomy and Physiology

July /Aug 2023



**TVET CURRICULUM DEVELOPMENT, ASSESSMENT AND CERTIFICATION
COUNCIL (TVET CDACC)**

WRITTEN ASSESSMENT

TIME: 3 HOURS

INSTRUCTIONS TO CANDIDATES

1. This paper has three sections **A**, **B** and **C**.
2. You are provided with a separate answer booklet.
3. Marks for each question are as indicated.
4. Do not write on the question paper.

**This paper consists of SEVEN printed pages
Candidates should check the question paper to ascertain that all pages
are printed as indicated and that no questions are missing**

SECTION A: (20 MARKS)

Attempt all questions in this section.

Each question carries 1 mark.

1. One of the following is principally involved in internal communication within the body?
 - A. The special senses.
 - B. The respiratory system.
 - C. The reproductive system.
 - D. The endocrine system
2. Blood does NOT contain:
 - A. Plasma.
 - B. Chromosomes.
 - C. Platelets.
 - D. Erythrocytes.
3. Which cells do NOT have nuclei?
 - A. Skeletal muscle fibers.
 - B. Red blood cells.
 - C. White blood cells.
 - D. Columnar epithelial cells.
4. Deoxyribonucleic acid (DNA) within a non-dividing cell is called:
 - A. A chromosome.
 - B. A chromatid.
 - C. Chromatin.
 - D. The nucleolus
5. Which of the following is an albumin?
 - A. Transferrin.
 - B. Thyroglobulin.
 - C. Fibrinogen.
 - D. Immunoglobulin

6. An artery that provides the only blood supply to a tissue is called a (n):
 - A. End artery.
 - B. Anastomotic artery.
 - C. Shunt.
 - D. Arteriole.
7. The base of the heart is associated with which structure?
 - A. The diaphragm.
 - B. The 5th costal cartilage.
 - C. The xiphoid sternum.
 - D. The origin of the aorta.
8. The atrioventricular node:
 - A. Sets the normal heart rate.
 - B. Generates electrical signals, but at a faster rate than the sinoatrial node.
 - C. Controls blood flow between the atria and the ventricles.
 - D. Acts as the heart's secondary pacemaker.
9. Lymph and plasma:
 - A. Are identical in composition.
 - B. Are very similar in composition, although plasma contains fewer plasma proteins.
 - C. Are very similar in composition, although lymph contains no white blood cells.
 - D. Are very similar in composition, although lymph may contain cell debris.
10. At the synapse:
 - A. The presynaptic neurone has one large synaptic knob.
 - B. Neurotransmitters are made just before they are required rather than being stored.
 - C. Neurotransmitters diffuse across the synaptic cleft and can only act on specific receptor sites.
 - D. Neurotransmitters always have an excitatory effect on the postsynaptic membrane.

11. Which lies outermost in the cranial cavity?
 - A. The dura mater.
 - B. The arachnoid mater.
 - C. The pia mater.
 - D. The subarachnoid space.
12. The brain stem includes the:
 - A. Cerebrum.
 - B. Thalamus.
 - C. Pons.
 - D. Cerebellum.
13. Which of the auditory ossicles is anvil-shaped and has long and short processes?
 - A. The malleus.
 - B. The incus.
 - C. The stapes.
 - D. The saccule.
14. Eye colour is determined by the:
 - A. Cornea.
 - B. Choroid.
 - C. Iris.
 - D. Retina.
15. Secretion of which hormone is regulated by a positive feedback mechanism?
 - A. Luteinizing hormone (lh).
 - B. Thyroxine.
 - C. Oxytocin.
 - D. Glucagon
16. The two tiny openings in the laryngopharynx communicate with:
 - A. The oropharynx.
 - B. The maxillary sinus.
 - C. The middle ear.
 - D. The ethmoid sinus.

17. The serous membrane that lines the abdominal wall is the:
- A. Visceral peritoneum.
 - B. Parietal peritoneum.
 - C. Mesentery.
 - D. Greater omentum
18. Chromosomes:
- A. Come in pairs, numbered from 1–46.
 - B. Possess end regions called telomeres, which accumulate additional DNA with age.
 - C. Are different sizes: chromosome pair 1 is bigger than chromosome pair 10.
 - D. Are only seen in resting cells that are neither preparing to divide nor actively dividing.
19. Which of the following bones is a sesamoid?
- A. The navicular.
 - B. The first cervical vertebra.
 - C. The triquetral.
 - D. The patella
20. The fimbriae of the uterine tubes:
- A. Line the tubes to propel the ovum towards the uterus.
 - B. Are not enclosed in the broad ligament, but open into the peritoneal cavity.
 - C. Form a trumpet-like structure at the proximal end of each uterine tube.
 - D. Are the usual site of fertilization

SECTION B: (40 MARKS)

*Attempt **all** questions in this section.*

21. Outline any FOUR hormones produced by the anterior pituitary gland (4 marks)
22. Outline FOUR functions of the stomach in digestion (4 marks)
23. State FOUR cartilages that are found on the larynx and their functions (4 marks)
24. Outline FOUR functions of the surfactants produced by the lungs (4 marks)
25. Outline the components of the vestibule (3 marks)
26. Outline THREE effects of the parasympathetic stimulation on the eyes (3 marks)
27. State TWO types of action potential transmission along a neuron (4 marks)
28. Outline THREE types of muscle tissues (3 marks)
29. State THREE components of nucleotides (3 marks)
30. Outline FOUR functions of fats in the human body (4 marks)

SECTION C: (40 MARKS)

Attempt ANY TWO questions in this section.

31. You are working in an operating theatre where a patient has been wheeled in for insertion of a pacemaker in the heart.
- a) Draw a well labelled diagram illustrating the internal structures of the human heart (6 marks)
 - b) Outline any five (5) transportation roles of blood (5 marks)
 - c) Explain the flow of blood through the heart (9 marks)
32. The human ear plays an important role in the normal functioning of the body.
- a) What are the two functions of the ear ossicles? (2 marks)
 - b) Name any four anatomical parts of the human ear (4 marks)
 - c) Describe the physiology of hearing (14 marks)
33. A patient is brought in theatre for an operation due to gastro-duodenal ulcers. As an operation theatre technology student, you are aware that the gastrointestinal system functions in ingestion, digestion and absorption of food as well as elimination of waste.
- a) Outline four functions of gastric (stomach) secretions? (4 marks)
 - b) What are any six (6) functions of the liver? (6 marks)
 - c) Describe the adaptations of the small intestine to its functions (10 marks)