

UNIVERSITY OF SWAZILAND

MAIN EXAMINATION PAPER 2021

TITLE OF PAPER : HUMAN ANATOMY

COURSE CODE: BIO486

TIME ALLOWED : THREE HOURS

INSTRUCTIONS :

1. ANSWER QUESTION 1 AND ANY OTHER 2 (TWO) QUESTIONS
2. EACH QUESTION CARRIES TWENTY FIVE (25) MARKS
3. WHEREVER POSSIBLE ILLUSTRATE YOUR ANSWERS WITH LARGE CLEARLY LABELLED DIAGRAMS

SPECIAL REQUIREMENTS: NONE.

THIS PAPER IS NOT TO BE OPENED UNTIL PERMISSION HAS BEEN GRANTED BY THE INVIGILATORS

QUESTION 1.

- (a) Which plane of the body divides it into dorsal and ventral regions?
- A. Transverse
 - B. Axial
 - C. Coronal
 - D. Sagittal
- (b) To which of the following does the "tissue level" of structural organization refer?
- A. atoms, ions, molecules and electrolytes
 - B. mitochondria, ribosomes, nucleus, endoplasmic reticulum
 - C. nephron, alveolus, villus, lobule
 - D. muscle, nervous, connective, epithelial
- (c) The directional term "superior" in anatomy means which of the following?
- A. cephalic
 - B. ventral
 - C. caudal
 - D. dorsal
- (d) Which statement below about hormones is true?
- A. Hormones are enzymes that catalyse reactions
 - B. Hormones are released into the blood circulation
 - C. Hormones affect all cells of the body
 - D. Hormones are released by neurones at synapses
- (e) Which choice best describes the location of the majority of the musculo- skeletal system?
- A. It is in the dorsal cavity
 - B. It is in the ventral cavity
 - C. It is in the abdomino-pelvic cavity
 - D. It is not located in a body cavity
- (f) What structure separates the thoracic cavity from the abdominal cavity?
- A. The mediastinum
 - B. The diaphragm
 - C. The peritoneum
 - D. The pylorus
- (g) Which one of the following is NOT part of the endocrine system?
- A. the islets of Langerhans (pancreatic islets)
 - B. the thyroid gland
 - C. the acini cells of the pancreas
 - D. the parathyroid glands
- (h) Which of the following best describes the "anatomical position"?
- A. Standing vertically, arms held horizontally, legs apart so that the tips of the head, hands and feet lie on an imaginary circle, drawn around the body.
 - B. Standing "to attention", with hands held so that thumbs are ventral while the fifth digit is dorsal.

- C. Standing "at ease" with hands clasped behind your back while adjacent and dorsal to the sacrum.
- D. Standing vertically, arms parallel and lateral to the ribs with hands inferior to the elbows and supinated.
- (i) Which of the stated relationships is correct?
- A. the heart is inferior to the clavicle
 - B. the shoulder is distal to the carpals
 - C. the phalanges are proximal to the metacarpals
 - D. the eye is medial to the eyebrows
- (j) Which of the following is/are the contents of the dorsal body cavity?
- A. heart and lungs
 - B. brain and spinal cord
 - C. viscera
 - D. gut, kidneys, liver, pancreas, spleen, bladder, internal reproductive organs.
- (k) To what does the term "hypochondriac" refer?
- A. A condition of having too few chondria.
 - B. The region of abdomen inferior to the ribs.
 - C. A person who often complains of an ailment.
 - D. Having insufficient cartilage in the knees.
- (l) Which of the following is located beneath the diaphragm in the left upper quadrant of the abdominal cavity?
- A. Appendix
 - B. Duodenum
 - C. Gallbladder
 - D. Pancreas
 - E. Spleen
- (m) Which of the following controls body temperature, sleep, and appetite?
- A. Adrenal glands
 - B. Hypothalamus
 - C. Pancreas
 - D. Thalamus
 - E. Thyroid gland
- (n) A patient sustains severe blunt trauma to the left upper abdomen and requires surgery. Which one of the following organs is most likely to be involved?
- A. Appendix
 - B. Gallbladder
 - C. Pancreas
 - D. Urinary bladder
 - E. Spleen
- (o) Blood flows from the right ventricle of the heart into which of the following structures?
- A. Inferior vena cava
 - B. Left ventricle

- C. Pulmonary arteries
 - D. Pulmonary veins
 - E. Right atrium
- (p) At which of the following locations does bile enter the digestive tract?
- A. Gastroesophageal sphincter
 - B. Duodenum
 - C. Ileocecum
 - D. Jejunum
 - E. Pyloric sphincter
- (q) Which of the following is the master gland of the endocrine system?
- A. Adrenal
 - B. Pancreas
 - C. Pineal
 - D. Pituitary
 - E. Thyroid
- (r) Male hormones are produced by which of the following?
- A. Glans penis
 - B. Prepuce
 - C. Prostate
 - D. Testes
 - E. Vas deferens
- (s) Which of the following is an accessory organ of the gastrointestinal system that is responsible for secreting insulin?
- A. Adrenal gland
 - B. Gallbladder
 - C. Liver
 - D. Pancreas
 - E. Spleen
- (t) Which of the following structures is part of the small intestine?
- A. Ascending colon
 - B. Cecum
 - C. Ileum
 - D. Sigmoid colon
 - E. Transverse colon
- (u) The dorsal body cavity contains which of the following organs?
- A. The brain.
 - B. The brain and spinal cord.
 - C. The brain, spinal cord and heart.
 - D. The brain, spinal cord, heart and kidneys.
- (v) Which type of cell produces hydrochloric acid?
- A. Zymogenic cells
 - B. Parietal cells
 - C. Chief cells
 - D. Enteroendocrine cells

- (w) Which liver cells produce bile?
- A. Kupffer cells
 - B. sinusoids
 - C. hepatocytes
 - D. the acini
- (x) Which statement about the layers of the alimentary canal is correct?
- A. The serosa absorbs the products of digestion.
 - B. The mucosa protects against self-digestion.
 - C. The sub-mucosa is involved in segmentation and peristalsis
 - D. The muscularis externa is dense connective tissue.
- (y) Which layer of the gastro-intestinal tract is in contact with the contents of the gut?
- A. Muscularis externa
 - B. Mucosa
 - C. Serosa
 - D. Sub-mucosa

QUESTION 2.

Employing relevant examples and sketches, list, define and describe the human body's organizational levels from smallest to largest.. (25 Marks)

QUESTION 3.

Write an essay detailing the role of the endocrine system in human physiology. (25 Marks)

QUESTION 4.

Describe and discuss the component parts and tissues of the human digestive tract. (25 Marks)

QUESTION 5.

Employing a properly labelled sketch describe and discuss the anatomy of the human heart. [25 Marks]

