



**NAMIBIA UNIVERSITY  
OF SCIENCE AND TECHNOLOGY  
FACULTY OF HEALTH, APPLIED SCIENCES AND NATURAL RESOURCES**

**DEPARTMENT OF HEALTH SCIENCES**

<b>QUALIFICATION:</b> BACHELOR OF ENVIRONMENTAL HEALTH SCIENCES BACHELOR OF HEALTH INFORMATION SYSTEM MANAGEMENT BACHELOR OF HUMAN NUTRITION	
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<b>FIRST OPPORTUNITY EXAMINATION QUESTION PAPER</b>	
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**THIS QUESTION PAPER CONSISTS OF 9 PAGES** (Including this front page)

## SECTION A [50 MARKS]

### QUESTION 1

[40 MARKS]

1. Evaluate the statements in each numbered section and select the most appropriate Answer or phrase from the given possibilities. Write the appropriate letter next to the number of the statement/phrase in the ANSWER BOOK. Each question carries **1 – marks**

- 1.1 What is the body's response to a rise in blood plasma osmotic pressure? [1]
- a) The anterior pituitary releases ADH which makes the renal tubule permeable to water.
  - b) The posterior pituitary releases ADH which makes the renal tubule permeable to water.
  - c) The juxtaglomerular apparatus releases renin which promotes diuresis
  - d) The glomerular filtration rate increases so more urine is produced.
- 1.2 Plasma is : [1]
- a) 50 % water
  - b) 91 % electrolytes
  - c) 91 % water
  - d) 50 % electrolytes
- 1.3 The spleen is located in the: [1]
- a) Right hypochondrium
  - b) Thoracic cavity
  - c) Pelvic cavity
  - d) Left hypochondrium
- 1.4 What is the entry point to the kidney for the renal artery, renal vein, lymphatics and nerves called? [1]
- a) Renal pyramid
  - b) Renal hilus
  - c) Renal capsule
  - d) Renal column
- 1.5 The largest structure of the brain is the: [1]
- a) Cerebrum
  - b) Cerebellum
  - c) Brain stem
  - d) Limbic system

- 1.6 The chamber that actually houses the hearing receptors is the: [1]
- a) Vestibule
  - b) Semicircular canal
  - c) Scala tympani
  - d) Cochlear duct
- 1.7 What method does the glomerulus of the kidney nephron use to remove the dissolved substances from the blood to the filtrate? [1]
- a) Active transport
  - b) Diffusion along the concentration gradient
  - c) High hydrostatic pressure
  - d) Osmosis
- 1.8 The outer covering of each bone, made from fibrous connective tissue, is called: [1]
- a) Epiphysis
  - b) Diaphysis
  - c) Articular cartilage
  - d) Periosteum
- 1.9 In which cavity is the heart situated: [1]
- a) Pelvic cavity
  - b) Thoracic cavity
  - c) Cranial cavity
  - d) Abdominal cavity
- 1.10 In which part of a cell does the process of making ATP from oxygen and glucose take place: [1]
- a) Lysosomes
  - b) Ribosomes
  - c) Mitochondria
  - d) Golgi apparatus
- 1.11 The small holes in which some connective tissue cells reside are termed: [1]
- a) Lacunae
  - b) Lamellae
  - c) Lumen
  - d) Lamaze

- 1.12 Where are the male ejaculatory ducts? [1]
- a) In the testicles before the epididymis.
  - b) In the penis.
  - c) Between the bulbourethral glands and the urethra.
  - d) At the end of the vas deferens (ductus deferens).
- 1.13 The following are the internal organs of the female reproductive system: [1]
- a) The uterus, the bladder, vagina and the appendix
  - b) The vagina, the cervix, the uterus, the fallopian tubes and the ovaries
  - c) The cervix, the uterus, the fallopian tubes and the ovaries
  - d) The vagina, the cervix, the bladder, the uterus, the fallopian tubes and the ovaries
- 1.14 What is the function of luteinizing hormone? [1]
- a) It stimulates the interstitial (Leydig) cells to produce testosterone.
  - b) It stimulates sustentacular (Sertoli) cells to produce sperm.
  - c) It stimulates the anterior pituitary to release follicle-stimulating hormone.
  - d) It stimulates the ovary to develop follicles.
- 1.15 The spinal cord communicates with the: [1]
- a) Brain and Autonomic nervous system
  - b) Brain and peripheral nerves
  - c) Eye and the brain
  - d) Skeletal muscle and the peripheral nerves
- 1.16 The movement of water through a selectively permeable membrane is called: [1]
- a) Facilitated diffusion
  - b) Active transport
  - c) Simple diffusion
  - d) Osmosis
- 1.17 The middle layer of the bladder is called the: [1]
- a) Tunica serosa
  - b) Tunica muscularis
  - c) Tunica mucosa
  - d) Tunica adventitia

- 1.18 Which anatomical structures do the “conducting zone” of the lower respiratory tract contains? [1]
- a) Eustachian tube, larynx and trachea.
  - b) Primary, secondary and tertiary bronchi and bronchioles.
  - c) Nares, conchae, olfactory mucosa and sinuses.
  - d) Nasopharynx and larynx.
- 1.19 Which of the following hormone helps in the secretion of HCL from the stomach? [1]
- a) Gastrin
  - b) Secretin
  - c) Pepsin
  - d) Renin
- 1.20 The vitamin essential for blood clotting is: [1]
- a) vitamin A
  - b) vitamin B
  - c) vitamin C
  - d) vitamin K
- 1.21 Which among the following is vestigial in function? [1]
- a) Duodenum
  - b) Vermiform appendix
  - c) Peyer’s patch
  - d) Plicae circulares
- 1.22 Which of the following is a balancing organ in humans? [1]
- a) Eardrum
  - b) Vestibular region
  - c) Cochlea
  - d) Organ of corti
- 1.23 Cholecystokinin stimulates: [1]
- a) Pancreas
  - b) Gall bladder
  - c) Secrete bile
  - d) Kidneys

- 1.24 How many pairs of spinal nerves are found in humans? [1]  
a) 33  
b) 31  
c) 13  
d) 12
- 1.25 Which of the following is the longest? [1]  
a) Stomach  
b) Esophagus  
c) Small intestine  
d) Large intestine
- 1.26 Which system is a major source of heat and allows us to maintain body temperature? [1]  
a) Skeletal system  
b) Muscular system  
c) Endocrine system  
d) Integumentary system
- 1.27 What prevents the clotting of blood in blood vessels? [1]  
a) Serotonin  
b) Fibrinogen  
c) Heparin  
d) Fibrin
- 1.28 During which phase, do the individual chromosomes line up in the middle of the cell? [1]  
a) Metaphase  
b) Prophase  
c) Anaphase  
d) Telephase
- 1.29 Which epithelium is found in the lungs at the site of gas exchange? [1]  
a) Simple squamous  
b) Simple cuboidal  
c) Simple columnar  
d) Pseudostratified columnar
- 1.30 The cardiac cycle has how many phases? [1]  
a) 2  
b) 4  
c) 3  
d) 1

- 1.31 CSF is produced by the: [1]
- a) Dendrites
  - b) Choroid plexus
  - c) Meninges
  - d) Cell body
- 1.32 What units is a blood pressure of 120/80 is expressed in? [1]
- a) Millimetres of mercury
  - b) Centimetres of blood
  - c) Centimetres of mercury
  - d) Pascals
- 1.33 Which of the following is NOT a "long" bone? [1]
- a) The humerus
  - b) The tibia
  - c) The carpal
  - d) The metacarpal
- 1.34 Which of the following is a function of the skeletal system? [1]
- a) Haemopoiesis
  - b) Haemostasis
  - c) Peristalsis
  - d) Glycogenolysis
- 1.35 In the adult, which cells, does thyroid hormone have no effect: [1]
- a) Pancreas
  - b) Stomach
  - c) Brain
  - d) Heart
- 1.36 Between which two anatomical structures does the Larynx lie? [1]
- a) The nares and the choanae
  - b) The epiglottis and the trachea
  - c) The choanae and the glottis
  - d) The glottis and the epiglottis

- 1.37 The posterior pituitary releases two hormones, arriving directly from the Hypothalamus. [1]
- a) Insulin and thyroxine
  - b) Oxytocin and insulin
  - c) Oxytocin and antidiuretic hormone
  - d) Adrenocorticotrophic hormone
- 1.38 Which of the following epithelia is best at stretching? [1]
- a) Simple squamous
  - b) Transitional
  - c) Simple columnar
  - d) Pseudostratified columnar
- 1.39 Which of the following is an active enzyme? [1]
- a) Procarboxypeptidase
  - b) Pepsin
  - c) Telophase
  - d) Trypsinogen
- 1.40 The blood group known as the ABO system is based on the presence of what proteins on blood cells? [1]
- a) Antibodies
  - b) Antigens
  - c) Agglutinins
  - d) Immunoglobulins

## QUESTION 2

[10 MARKS]

2. Assess the following statements and decide whether they are **true or false**. Write only the number of the question and next to it indicate your answer as **true or false** in the ANSWER BOOK. 1 marks for each question.

- 2.1 Left ventricular stroke volume is usually less than right ventricular stroke volume. [1]
- 2.2 The ovaries are kept approximately 3 ° F cooler than other pelvic organs. [1]
- 2.3 The genes of an individual will always be different from those of the parents. [1]
- 2.4 There are two umbilical veins and one umbilical artery. [1]
- 2.3 A vasectomy is the male equivalent of tubal ligation regarding the efficacy of contraception. [1]



- 2.4 Testosterone increases the number of red blood cells. [1]
- 2.5 All arteries carry oxygenated blood.
- 2.6 Vasa efferentia are the ductules leading from Placenta. [1]
- 2.7 Persons who are obese usually have a higher percentage of body fat than those who are leaner. [1]
- 2.8 The ability to sweat is the major method of regulating body water and concentration. [1]
- 2.9 Loss of blood from trauma will usually reduce the amount of urine that is produced. [1]
- 2.10 Chronic glomerulonephritis is usually a renal infection associated with streptococcal bacteria. [1]

### **SECTION B [20 MARKS]**

#### **QUESTION 3**

**[20 MARKS]**

- 3.1 Define glomerular filtration rate. Explain the factors affecting the glomerular filtration rate. [5]
- 3.2 Discuss the different functions of the liver. [5]
- 3.3 Compare the difference between various lung volumes. [5]
- 3.4 Outline any five (5) functional areas of the cerebral cortex with one (1) function for each. [5]

### **SECTION C [30 MARKS]**

#### **QUESTION 4**

**[30 MARKS]**

- 4.1 List the nine (9) hormones secreted by the pituitary gland. Explain any six (6) hormones and their functions. [15]
- 4.2 a) Define erythropoiesis and outline the stages of erythropoiesis. [10]
- b) Briefly discuss the function of blood. [5]

**GOOD LUCK!!!!**