**KENYA MEDICAL TRAINING COLLEGE – NYAMIRA**

**END OF FIRST SEMESTER EXAMINATION**

**SEPTEMBER 2013 KRCHN CLASS (PRE-SERVICE)**

**ANATOMY & PHYSIOLOGY EXAMINATION**

**DATE**: 4 MARCH 2014 **TIME**: 8.30 – 11.30 AM

**INSTRUCTIONS**

1. Enter your examination number and question number on each page used.
2. ALL questions are compulsory.
3. Omission of and or wrong numbering of a question or part of the question will result in 10% deduction of the marks scored from the relevant part.
4. Do NOT use a pencil.
5. Mobile phones are NOT allowed in the examination hall.

**PART ONE: MCQS (MULTIPLE CHOICE QUESTIONS) ANATOMY & PHYSIOLOGY – 20 MARKS**

Q.1. The situation where osmosis proceeds until equilibrium is reached and the solution on each side of the membrane are of the same concentration is known as:

1. Hypertonic.
2. Hypotonic.
3. Isotonic.
4. Osmosis.

Q.2. Organelle which synthesises proteins from amino acids and are composed of ribonucleic acid is referred to as:

1. Ribosomes.
2. Mitochondria.
3. Golgi apparatus.
4. Endoplasmic reticulum.

Q.3. At which state of mitosis do chromatids align on the centre of the spindles, attached by their centromeres:

1. Prophase.
2. Metaphase.
3. Anaphase.
4. Telophase.

Q.4. The blood group which as a donor is compatible with blood group B and AB and is incompatible with blood group A and O is:

1. A.
2. O.
3. AB.
4. B.

Q.5. Which of the following provides the site for lymphocytes formation?

1. Liver.
2. Lymphocyte system.
3. Plasma.
4. Bone marrow.

Q.6. The groups of cell bodies found in the peripheral nervous system is known as:

1. Ganglia.
2. Basal ganglia.
3. Grey matter.
4. Tracts.

Q.7. Elements are different from one another due to:

1. Electron configuration.
2. Isotopes.
3. Atomic number.
4. Atomic weight.

Q.8. Peptide hormones include:

1. Adrenaline, insulin, glucagon.
2. Adrenaline, glucocorticoid, thryroxine.
3. Thyroxine, glucagon, insulin.
4. Mineralocordicoid, steroids, noradrenaline.

**PART ONE: MCQS (MULTIPLE CHOICE QUESTIONS) ANATOMY & PHYSIOLOGY – 20 MARKS**

Q.9. The unpaired branches of the abdominal aorta include:

1. Left gastric artery, testicular arteries, inferior phrenic artery.
2. Hepatic artery, spleenic artery, left gastric artery.
3. Inferior phrenic arteries, testicular arteries, ovarian arteries.
4. Spleenic artery, renal arteries, hepatic artery.

Q.10. The amount of air remaining in the air passages and alveoli at the end of quiet expiration is known as:

1. Residual volume.
2. Tidal volume.
3. Vital capacity.
4. Functional residual capacity.

Q.11. Accessory muscles involved in forced expiration include:

1. Scalene muscles, sternocleidomastoid muscles.
2. Sternocleidomastoid muscles, internal intercostals muscles.
3. Internal intercostals muscles, abdominal muscles.
4. Abdominal muscles, scalene muscles.

Q.12. Nerves communicate to each other through:

1. Connector.
2. Association neurone.
3. Neurotransmitter.
4. Synaptic knobs.

Q.13. The primary source of erythropoietin is:

1. Kidney.
2. Lung.
3. Bone marrow.
4. Liver.

Q.14. Simple epithelium tissue include:

1. Columnar, squamous, stratified squamous.
2. Squamous, cuboidal, columnar.
3. Cuboidal, areolar, squamous.
4. Columnar, transitional,. Stratified squamous.

Q.15. The commissural tracts that connect corresponding areas of the cerebral hemisphere is known as:

1. Pyramidal tracts.
2. Corpus collosum.
3. Gyrus.
4. Internal capsule.

Q.16. Angiotension converting enzyme inhibitor block:

1. Conversion of angiotensinogen to angiotensin.
2. Conversion of angiotensin 2 to aldosterone.
3. Release of rennin.
4. Conversion of angiotensin 1 to angiotensin 2.

**PART ONE: MCQS (MULTIPLE CHOICE QUESTIONS) ANATOMY & PHYSIOLOGY – 20 MARKS**

Q.17. Anatomical term which denotes the ear is:

1. Otic.
2. Hallux.
3. Buccal.
4. Calcaneal.

Q.18. The layer of the artery which consist of nervous cells is referred to as:

1. Tunica adventitia.
2. Endothelium.
3. Tunica intima.
4. Tunica media.

Q.19. Agranulocytes type of leukocytes include:

1. Neutrophils, lymphocytes.
2. Eosinophils, basophils.
3. Monocytes, neutrophils.
4. Lymphocytes, monocytes.

Q.20. A sensory nerve ending of the skin which is sensitive to light pressure is known as:

1. Free nerve ending.
2. Pacinian corpuscle.
3. Meissner.s corpuscle.
4. Cutaneous nerve.

**PART TWO: SHORT ANSWER QUESTIONS ANATOMY & PHYSIOLOGY – 40 MARKS**

Q.1. With the aid of a well labelled diagram, explain internal respiration. 10 marks

Q.2. Outline six (6) functions of pharynx. 6 marks

Q.3. Draw a well labelled diagram of the parts of the ear. 5 marks

Q.4. State four (4) functions of spleen. 4 marks

Q.5. Outline four (4) short-term blood pressure regulation. 4 marks

Q.6. State three (3) conditions in which oxyhaemogiobin releases its oxygen readily. 3 marks

Q.7. Outline three (3) functions of pancreatic juice. 3 marks

Q.8. State five (5) functions of the skin. 5 marks

**PART THREE: LONG ANSWER QUESTIONS (ESSAYS) ANATOMY & PHYSIOLOGY – 40 MARKS**

Q.1. In nervous system, neurones conduct impulses and are supported by unique

connective tissue cells.

1. Describe the nerve impulse/action potential. 12 marks
2. Draw a well labelled diagram of myelinated neurone. 5 marks
3. State three (3) types of meninges. 3 marks

Q.2. Kidney is the main excretory system and is composed of about 1 – 2 million nephrons.

1. Draw a well labelled diagram of a nephron and associated blood vessels. 5 marks
2. Describe the urine formation. 15 marks