**KENYA MEDICAL TRAINING COLLEGE – NYAMIRA**

**END OF YEAR ONE SEMESTER ONE EXAMINATION**

**MARCH 2016 KRCHN CLASS (PRE-SERVICE)**

**ANATOMY & PHYSIOLOGY EXAMINATION**

DATE: 28/9/2016 TIME:…………………..

**INSTRUCTIONS**

1. Read the questions carefully and answer only what is asked.
2. Enter your examination number and question number on each page used.
3. ALL questions are compulsory.
4. For part 1 (MCQs), write the answer in the spaces provided on the answer booklet and each MCQ is one (1) mark.
5. For Part 2 (SHORT ANSWER QUESTIONS), answer the questions following each other.
6. For Part 3 (LONG ANSWER QUESTIONS), answer to each question MUST start on a separate page.
7. 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.
8. Do NOT use a pencil.
9. Mobile phones are NOT allowed in the examination hall.

For Examiner:

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| --- | --- | --- | --- | --- |
| **MCQS** | **SAQS** | **LAQS 1** | **LAQS 2** | **TOTAL** |
|  |  |  |  |  |

**PART ONE: MCQS (MULTIPLE CHOICE QUESTIONS) A & P– 20 MARKS**

Q.1. Muscles of the neck include:

1. Masseter, temporalis.
2. Teres major, sacrospinalis.
3. Trapezius, sternocleidomastoid.
4. Rectus abdominis, external oblique.

Q.2. At which stage of mitosis process do the mitotic spindle disappear, the chromosomes uncoil and the nuclear envelope reforms:

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

Q.3. Simple epithelium tissue include:

1. Columnar, squamous, stratified squamous.
2. Columnar, squamous, transitional.
3. Keratinised stratified, cuboidal, reticular.
4. Squamous, columnar, cuboidal.

Q.4. Appendicular skeleton include:

1. Pelvis, ribs, sternum, cranium.
2. Scapula, femur, pelvis, clavicle.
3. Clavicle, ribs, tibia, patella.
4. Cranium, promontory of sacrum, ribs, scapula.

Q.5. The group of cell bodies found at the centre of the brain is referred as:

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

Q.6. Nerves communicate to each other through:

1. Neurotransmitters.
2. Synapse.
3. Connector.
4. Nodes of Ranvier.

Q.7. Peptide hormones include:

1. Adrenaline glucocorticoid, thyroxine.
2. Thyroxine, glucagon, insulin.
3. Mineralocorticoid, steroids, noradrenaline.
4. Adrenalines, insulin, glucagon.

**PART ONE: MCQS (MULTIPLE CHOICE QUESTIONS) A & P– 20 MARKS**

Q.8. The most numerous leukocytes is:

1. Basophils.
2. Monocytes.
3. Neutrophils.
4. Eosinophils.

Q.9. Accessory muscles involved in forced inspiration include:

1. Scalene, sternocleidomastoid.
2. Abdominal, scalene.
3. Sternocleidomastoid, internal intercostal.
4. External intercostal, abdominal.

Q.10. The cells organelle involved in the processes by which chemical energy is made available in the cell is:

1. Mitochondria.
2. Ribosomes.
3. Lysosomes.
4. Golgi apparatus.

Q.11. A situation in which the plasma becomes more dilute than the intracellular fluid within the red blood cells that may cause red blood cell to swell and burst is known as:

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

Q.12. The connective tissue which surrounds and encloses number of bundles of nerve fibres is known as:

1. Pyramidal tracts.
2. Epineurium.
3. Perineurium.
4. Endoneurium.

Q.13. Angiotensin converting enzyme inhibitor block:

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

Q.14. Vestibule and semi-circular canals are involved in:

1. Hearing.
2. Balancing.
3. Speech.
4. Vision.

**PART ONE: MCQS (MULTIPLE CHOICE QUESTIONS) A & P– 20 MARKS**

Q.15. Pancreatic juice consists of:

1. Trypsinogen, mineral salt, amylase, lipase.
2. Trypsin. Lipase, mineral salt, hydrochloric acid.
3. Cholesterol, lipase, amylase, bile salts.
4. Mineral salts, trypsinogen, hydrochloric acid, bilirubin.

Q.16. The organ found in the left hypochondriac region is known as:

1. Appendix.
2. Spleen.
3. Caecum.
4. Duodenum.

Q.17. The elements are different from one another due to:

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

Q.18. A granulocytes type of leukocytes include:

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

Q.19. The primary source of erythropoietin is:

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

Q.20. Which of the following bone cells are involved in the reabsorption of bone to maintain the optimum shape:

1. Osteoblasts.
2. Osteoclasts.
3. Osteocytes.
4. Chondrocytes.

**PART TWO: SHORT ANSWER QUESTIONS – A & P – 40 MARKS**

Q.1. Explain three (3) phases of gastric juice secretion. 6 marks

Q.2. Outline four (4) functions of a plasma protein.maintains

Maintains osmostic pressure

Acts as an antibody

Involves in the transportation of some hormones

Involves in the co cogulation of blood

4 marks

Q.3. Explain how buffer system maintain homeostasis of body PH. 5 marks

Q.4. State three (3) functions of lymphatic system. 3 marks

Q.5. List six (6) parts of the brain. 3 marks

Q.6. Explain a negative feedback in the regulation of thyroxine by the anterior lobe

of the pituitary gland and the hypothalamus. 5 marks

Q.7. Draw a well labelled diagram of a transverse section of the spinal cord

showing nerve roots on one side. 5 marks

Q.8. Explain the process of selective reabsorption in formation of urine. 4 marks

Q.9. Explain the process of internal respiration. 4 marks

**PART THREE: LONG ANSWER QUESTIONS – A & P – 40 MARKS**

Q.1. The ear is an organ of hearing and body balance.

1. Draw a well labelled diagram showing parts of the ear. 6 marks
2. Describe the physiology of hearing. 14 marks

Q.2. The heart has the pumping function which ensures a constant blood circulation

in the body.

1. Outline three (3) factors that determine venous return. 3 marks
2. Describe the conducting system of the heart. 12 marks
3. Draw a well labelled diagram indicating the direction of blood flow through

the heart. 5 marks