**KENYA MEDICAL TRAINING COLLEGE – NYAMIRA**

**END OF YEAR ONE SEMESTER ONE EXAMINATION**

**MARCH 2015 KRCHN CLASS (PRE-SERVICE)**

**ANATOMY & PHYSIOLOGY EXAMINATION**

DATE: 23/9/2015 TIME:8.30 – 11.30pm

**INSTRUCTIONS**

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

For Examiner:

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| --- | --- | --- | --- | --- |
| **MCQS** | **SAQS** | **LAQS 1** | **LAQS 2** | **TOTAL** |
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**PART ONE: MCQS (MULTIPLE CHOICE QUESTIONS) A & P– 20 MARKS**

Q.1. The normal cardiac cycle will last for:

1. 0.08 seconds.
2. 0.8 seconds.
3. 8 seconds.
4. 72 seconds.

Q.2. The type of neuroglia that act as the blood-brain barrier is:

1. Microglia.
2. Ependymal cells.
3. Oligodendrocytes.
4. Astrocytes.

Q.3. Muscles of the face include:

1. Trapezius, teres major, temporalis.
2. Temporalis, masseter, orbicularis oris.
3. Teres major, trapezius, psoas.
4. Sacrospinalis, psoas, orbicularis oris.

Q.4. The projection tracts that connect the cerebral cortex with grey matter of lower parts of the brain and with spinal cord is:

1. Central sulcus.
2. Longitudinal fissue.
3. Internal capsule.
4. Gyrus.

Q.5. The organelles involved in the aerobic respiration include:

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

Q.6. Elements are different from one another due to:

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

Q.7. At which state of mitosis process do centromeres separate and one of each pair of sister chromatids migrates to each end of the spindle?

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

Q.8. The blood group which as a donor is compatible with blood group B and AB and is incompatible with blood group A and O.

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

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

Q.9. A situation where the plasma becomes more dilute than the intracellular fluid within the red blood cells which may cause red blood cells to swell and burst. In this situation, the plasma is said to be:

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

Q.10. The groups of cell bodies found within the cerebrum is:

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

Q.11. The unpaired branches of abdominal aorta include:

1. Ovarian arteries, testicular arteries, renal arteries.
2. Splenic artery, renal arteries, hepatic artery.
3. Hepatic artery, left gastric artery, splenic artery.
4. Ovarian artery, renal arteries, hepatic artery.

Q.12. The brachial plexus include:

1. Phrenic nerve, supra clavicular nerve, musculocutaneous nerve.
2. Supraclavicular nerve, ulnar nerve, circum flex nerve.
3. Circum flex nerve, median nerve, radial nerve.
4. Musculocutaneous nerve, axillary nerve, phrenic nerve.

Q.13. The following are sites where serous membranes are found within the human body:

1. Pericardium, peritoneum, pleura.
2. Pleura, peritoneum, myocardium.
3. Peritoneum, endocardium, pleura.
4. Pleura, pericardium, endocardium.

Q.14. Diencephalon is part of the brain which involve:

1. Thalamus corpus, callosum, pineal body.
2. Pineal body, hypothalamus, thalamus.
3. Mid brain, pons, medulla oblongata.
4. Cerebellum, thalamus, pineal body.

Q.15. The layer of the artery which consists of nervous tissue is:

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

Q.16. The abduction movement at the synovial joints is best defined as:

1. Movement away from the midline of the body.
2. Turning the sole of the foot inward.
3. Movement round the long axis of above.
4. Straight or bending backward.

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

Q.17. The memory cells that recognizes antigens are collectively called:

1. Erythrocytes.
2. Monocytes.
3. Reticulocytes.
4. Lymphocytes.

Q.18. The primary source of erythropoietin is:

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

Q.19. The connective tissue which surrounds and encloses number of bundles of nerve fibres is known as:

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

Q.20. It forms the bulk of the calf of the leg:

1. Soleus.
2. Anterior tibialis.
3. Gastroc nemius.
4. Hamstring muscles.

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

Q.1. Outline four (4) functions of a plasma protein. 4 marks

Q.2. State four (4) short term controls. 4 marks

Q.3. Explain how buffer system maintains homeostasis in body PH. 5 marks

Q.4. Outline three (3) functions of the lymph nodes. 3 marks

Q.5. State three (3) parts of the peripheral nervous system. 3 marks

Q.6. Explain a negative feedback involved in the regulation of thyroid stimulating

hormone by the anterior lobe of the pituitary gland. 5 marks

Q.7. Explain the process of internal respiration. 6 marks

Q.8. Outline five (5) functions of gastric juice. 5 marks

Q.9. Explain the process of selective reabsorption in urine formation. 5 marks

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

Q.1. The nervous system consists of the brain, the spinal cord and peripheral nerves.

1. Outline three (3) functions of the cerebrospinal fluids. 3 marks
2. Describe the flow of cerebrospinal fluid. 12 marks
3. Draw a well labelled diagram with arrows showing the flow of cerebrospinal

fluid. 5 marks

Q.2. The special sense of sight has specialized sensory receptors outside and inside the brain.

1. State three (3) functions of lacrimal apparatus. 3 marks
2. Describe the physiology of sight. 12 marks
3. Draw a well labelled diagram of the section of the eye. 5 marks