

CHUKA



UNIVERSITY

**UNIVERSITY EXAMINATIONS
FIRST YEAR EXAMINATION FOR BACHELOR OF SCIENCE IN PUBLIC
HEALTH (UPGRADING)**

NUPU 112: HUMAN PHYSIOLOGY

STREAMS: Y1T1

TIME: 2 HOURS

DAY/DATE:

INSTRUCTIONS:

- 1. Do not write anything on the question paper.**
- 2. Mobile phones and any other reference materials are NOT allowed in the examination room.**
- 3. The paper has three sections. Answer ALL questions.**
- 4. All your answers for Section I (MCQs) should be on one page.**
- 5. Number ALL your answers and indicate the order of appearance in the space provided in the cover page of the examination answer booklet.**
- 6. Write your answers legibly and use your time wisely**

MULTIPLE CHOICE QUESTIONS (20MKS)

1. It is true that
 - a. Parathyroid gland is both endocrine and exocrine
 - b. Endocrine pancreas secretes gastrin hormone
 - c. Parathyroid gland has both adenohypophysis and neurohypophysis
 - d. Glucagon and norepinephrine are hormones
2. Parafollicular cells of thyroid gland secretes
 - a. Thyroxine
 - b. Triiodothyronine
 - c. Calcitonin
 - d. Cortisol
3. The following hormones penetrate the cell membrane and act internally
 - a) Amines and polypeptides
 - b) Steroids and thyroid hormones

- c) Thromboxanes and Leukotrienes
 - d) Prostaglandins
4. When describing the lung volumes, the vital capacity is
 - a. The volume of one breath
 - b. The total volume of air contained in the lungs
 - c. The total volume of exhaled air, from a maximum inspiration to a maximum exhalation
 - d. The residual volume and the expiratory reserve volume
 5. The following is true about the cell nucleus
 - a. The smallest organelle.
 - b. The only organelle visible under the light microscope.
 - c. Most cells have several nuclei
 - d. Present in all prokaryotic cells that divide
 6. The process of phagocytosis involves all of the following except
 - a. Extension of pseudopods/projections
 - b. Formation of phagosomes
 - c. Ingestion by lysosomal enzymes
 - d. Release of materials from a cell
 7. Ribosomes are found in cell cytoplasm. They are concerned with
 - a. Protein synthesis
 - b. Participate in phagocytosis
 - c. Phospholipids synthesis
 - d. Participate in exocytosis
 8. The “power house” of a cell is
 - a. Rough endoplasmic reticulum
 - b. Mitochondria
 - c. Smooth endoplasmic reticulum
 - d. Nucleus
 9. Central nervous system consists of
 - a. Cranial nerves and spinal nerves
 - b. Brain and spinal cord
 - c. Special sense organs
 - d. Sympathetic and parasympathetic nerves
 10. Functions of Neuroglia includes
 - a. Controlling muscle activity
 - b. Regulating glandular secretions

- c. Maintaining homeostasis in the Extra Cellular Fluid
- d. Generation of action potential

SHORT ANSWER QUESTIONS (40MKS)

- 1.State the four (4) groups of hormones giving an example in each (8mks)
- 2.Describe the Fluid mosaic model of the plasma membrane (8mks)
3. With the aid of a diagram, indicate the movement of blood through a heart (8mks)
- 4.Explain four (4) functions of skeletal system (8mks)
5. Explain four (4) processes involved in transport across plasma membrane (8mks)

LONG ANSWER QUESTIONS (20mks)

Body fluid homeostasis is important for optimal functioning of an organism but it may be disturbed in a disease state.

- (i) Explain the two major water compartments in the body (4mks)
- (ii) State four (4) possible causes of Hypervolemia in an organism (4mks)
- (iii) Explain the functions of water in an organism (12mks)