

# KISII UNIVERSITY

## DEPARTMENT OF MEDICAL PHYSIOLOGY

END OF SECOND YEAR EXAMINATION TOWARDS THE DEGREE  
OF BACHELOR OF MEDICINE AND BACHELOR OF SURGERY  
(M.B.Ch.B) (2021/22)

### **MEDS 211: MEDICAL PHYSIOLOGY II (Paper 2)**

**DATE: September, 2022**

**TIME: 3HRS**

#### **SECTION A: SHORT ANSWER QUESTIONS (60 Marks)**

1. Describe the mechanism by which cutaneous touch sensory receptors code the attributes of the touch stimulus (5 marks)
2. List and explain the elements of the filtration membrane within the renal corpuscle (5 marks)
3. Describe the components of withdrawal reflex (5 marks)
4. Describe the relationship between the adrenal medulla and the autonomic nervous system (5 marks)
5. Outline the physiological changes during pregnancy (5 marks)
6. Distinguish role and location between the two divisions of the enteric nervous system (5 marks)
7. Explain the formation and flow of lymph till it joins the general circulation (5 marks)
8. Describe the principles of GUT control (5 marks)
9. State any 5 factors that affect myocardial contraction (5 marks)
10. With a well labelled diagram, write brief notes on the Pressure-Volume loop of the cardiac cycle (5 marks)
11. State 5 factors that would normally shift the Oxygen-Hemoglobin dissociation curve to the right (5 marks)
12. Explain the concept of long-term potentiation and how it relates to learning (5 Marks)

**SECTION B: LONG ANSWER QUESTION (40 Marks)**

**Attempt two Essay questions. Question ONE is Compulsory.**

1. Describe and explain the physiology of the waves and intervals of the normal ECG (20 Marks)
2. Describe the structure of the retina and elucidate the process of Phototransduction (20 Marks)
3. Discuss the hormones involved in calcium and Phosphate metabolism, including their synthesis, action and regulation in the human body (20 marks)