



**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY  
SCHOOL OF HEALTH SCIENCES  
UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE  
IN PUBLIC HEALTH/ COMMUNITY HEALTH AND DEVELOPMENT**

**1<sup>ST</sup>YEAR 2<sup>ND</sup> SEMESTER 2015/2016**

**MAIN CAMPUS**

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**COURSE CODE: HCD 3121**

**COURSE TITLE: MEDICAL PHYSIOLOGY**

**EXAM VENUE: STREAM**

**DATE:**

**EXAM SESSION:**

**TIME:**

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**Instructions:**

- 1. Answer all questions in section A and any other 2 questions in Section B.**
- 2. Candidates are advised not to write on the question paper**
- 3. Candidates must hand in their answer booklets to the invigilator while in the examination room**

**SECTION A 30MKS**

**Answer all questions**

1. What is a Schwann cell, what does it do? **(3marks)**
2. a) Define glomerular filtration rate GFR **(2marks)**  
b) Enlist the determinants of GFR. **(3marks)**
3. Describe the role of somatic sensory system **(3marks)**
4. What is the normal blood calcium level? **(1marks)**
5. A boy of 10 years was brought by his father to a medical specialist. The boy because of retarded growth appeared to be of 4-5 years. During talking the boy answered the question intelligently. His body parts were proportionate but of smaller size: **(1mark each)**
  - a) From which disorder the boy was suffering?
  - b) What was the cause of this disorder?
  - c) What are different types of this disorder?
6. a) Name the hormones of posterior pituitary gland? **(2marks)**  
b) What are somatomedians? **(2marks)**
7. a) What is a cardiac index **(2marks)**  
b) List methods of measuring cardiac output **(3marks)**
8. Write a note on Analgesia Sytem **(2marks)**
9. Explain the difference between myoglobin and haemoglobin **(2marks)**
10. Name the hormones secreted from the thyroid gland **(2marks)**

## **SECTION B 40MARKS**

Answer any TWO questions from this section

1. a) Discuss in detail the endocrine regulation of serum calcium level (10marks)  
b) Describe the composition, function and regulation of secretions of gastric juices (10marks)
  
2. a) Explain the features of metabolic acidosis and compensation of acidosis (12marks)  
b) Discuss the spinobulbospinal reflex of micturition (8marks)
  
3. a) Explain using a diagram the pathway for somatic pain-use example of a polysynaptic reflex- the flexor and crossed extensor reflexes (12marks)  
b) Describe the physiological effects of the thyroid and parathyroid hormones (8marks)
  
- 4 a) Using a diagram describe the structure of the eye and functions (12marks)  
b) Discuss the renal clearance (8marks)