

**CHUKA**



**UNIVERSITY**

**UNIVERSITY EXAMINATIONS**

**EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE IN  
ELECTRICAL AND ELECTRONIC ENGINEERING**

**EENG 111: WORKSHOP PRACTICE I**

**STREAMS: BSC EENG**

**TIME: 2 HOURS**

**DAY/DATE: WEDNESDAY 16/12/2020**

**2.30 P.M. – 4.30 P.M.**

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**INSTRUCTIONS:**

- **Answer question ONE and any other TWO.**

**QUESTION ONE (30 MARKS)**

- a. What is Occupational Safety and Health Act? (2 marks)
- b. In relation to workshop practice define the following terms. (4 marks)
  - i. Milling
  - ii. Grinding
  - iii. Hard wood
  - iv. Forming
- c. Giving examples differentiate between permanent and Semi-permanent joining processes. (4 marks)
- d. Riveting is one of the mechanical joining methods. Describe how it can be used join different materials together. (4 marks)
- e. Section 99 of Kenya Occupational Safety and Health Act, specifies that a worker shall not be employed at any machine or in any process liable to cause ill health or bodily injury unless he/she has been fully trained. Discuss. (6 marks)

- f. You and your fellow student are cutting grooves on a work piece. Unfortunately, your colleague's hand gets amputated by a lathe machine. What steps will you take to help him. (6 marks)
- g. Distinguish between Vernier instruments and micrometers. (4marks)

**QUESTION TWO (20 MARKS)**

- a. When selecting adhesive bonding as a joining method, a number of factors should be considered. State and explain them. (4 marks)
- b. Sketch a parallel jaw vice used for holding a work piece and label the main parts. (6 marks)
- c. The primary law covering worker safety in Kenya is the Occupational Safety and Health (OSH) Act of 2007 and revised in 2010. This law gives employees a number of rights, to supplementing these rights are a number of obligations and duties imposed on employers to maintain a safe work environment. State and explain these obligations and duties. (10 marks)

**QUESTION THREE (20 MARKS)**

- a. Assume you sustained a joint injury and the doctor want to keep an objective record of the recovery process for the case. Which instrument will he use and describe how he will go about the process. (4 marks)
- b. Explain the basic construction of a Milling Machine. (6 marks)
- c. The lathe machine is an accurate and versatile machine on which many operations can be performed. With the help of a well labelled diagram for illustration explain five of these operations. (10 marks)

**QUESTION FOUR (20 MARKS)**

- a. With aid of sketches distinguish the following metal saws. (4 marks)
  - i. Adjustable frame hacksaw
  - ii. Solid frame hacksaw
- b. Discuss precautions to be observed to minimize tools and machines hazards when working in a workshop. (8marks)
- c. With the help of a well labelled diagram for illustration describe for commonly used wood joints. (8 marks)

**QUESTION FIVE (20 MARKS)**

- a. Using a well labelled diagram explain the working principle of a lathe machine (6 marks)
  - b. List and explain four causes of injury at the workplace. (8marks)  
Lifting
  - c. State and describe four types of grinders. (8 marks)
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