



# **MAASAI MARA UNIVERSITY**

**REGULAR UNIVERSITY EXAMINATIONS  
2018/2019 ACADEMIC YEAR**

**FOURTH YEAR SECOND SEMESTER**

**SCHOOL OF TOURISM AND NATURAL  
RESOURCE MANAGEMENT**

**BACHELOR OF SCIENCE (FORESTRY)**

**COURSE CODE: FOR 433E**

**COURSE TITLE: SAWMILLING AND TIMBER  
SEASONING**

**DATE: 17<sup>TH</sup> APRIL 2019**

**TIME: 11.00-13.00HRS**

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**INSTRUCTIONS TO CANDIDATES**

Answer **ALL** questions in section **A** and any other **THREE** in section **B**.

## **SECTION A (25 MARKS)**

- 1) (a)** Briefly discuss Sawmilling as a local industry which foster development **3Marks**
- (b)** Discuss factors that an investor must consider before procurement of raw material for sawmilling **3Marks**
- (c)** What are the features that can make Mill size to vary? **3Marks**
- (d)** Define the following terms as used in sawmilling
- (i)** Physical wood supply
  - (ii)** Economic wood supply **4Marks**
- 2) (a)** Discuss the disadvantages of determining the quantity of logs by weight. **3Marks**
- (b)** Define the criteria used in sorting logs in the log-yard. **3Marks**
- (c)** Discuss the factors that affect cost of raw materials for sawmilling **3 Marks**
- (d)** Why is it important to debark logs before sawing? **3Marks**

## **SECTION B (45 MARKS)**

- 3) (a)** Name the three main saw types, citing advantages and disadvantages, illustrations and their uses **(9Marks)**
- (b)** Discuss the factors that affect volume yield of sawn timber **(3Marks)**
- (c)** Discuss any four wood conversion systems using illustration where possible **(3Marks)**
- 4) (a)** Describe and illustrate the following terms citing their importance in sawmilling
- (i)** Kerf
  - (ii)** Saw setting
  - (iii)** Pitch **(6Marks)**
- (b)** What is the effect of heat/friction between the saw and log? **(3Marks)**
- (c)** Give any three methods of saw densification. **(3Marks)**
- (d)** Discuss the factors that determine the amount of saw tensioning **(3 Marks)**
- 5) (a)** What are the advantages of kiln drying of timber? **(5Marks)**
- (b)** Write short notes on stacking/piling of timber for drying and illustrate **(4Marks)**
- (c)** Discuss the main features of wood drying kiln and their importance **(6 Marks)**
- 6) (a)** Discuss the following pressure treatment processes
- (i)** Full cell process
  - (ii)** Double vacuum process **(@3Marks =6)**
- (b)** What are the advantages of glulam products over solid wood?**(3Marks)**
- (c)** Briefly discuss factors that affect natural durability of wood.**(3Marks)**
- (d)** State the effects of decay on wood physical properties. **(3marks)**

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