



MAASAI MARA UNIVERSITY

**REGULAR UNIVERSITY EXAMINATIONS
2018/2019 ACADEMIC YEAR
FOURTH YEAR FIRST SEMESTER**

**SCHOOL OF TOURISM AND NATURAL
RESOURCE MANAGEMENT
BACHELOR OF SCIENCE (FORESTRY)**

COURSE CODE: WST 400

**COURSE TITLE: WOOD BASED PRODUCTS AND
UTILIZATION**

DATE: 10TH DECEMBER, 2018

TIME: 0830 - 1030 HRS

INSTRUCTIONS TO CANDIDATES

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

This paper consists of 2 printed pages. Please turn over

SECTION A: Answer all questions (25 Marks)

- 1(a) Discuss wood natural durability and its importance in conservation of wood as a resource. **4Marks.**
- (b) Explain the ideal properties of wood preservative for the Kenyan wood industry **4Marks**
- (c) Briefly discuss the methods used to improve treatability of resistant wood **3Marks**
- (d) Identify any two methods used in timber drying **2Marks**
- 2) (a) Explain three main classes of fibres and two sources of such fibres in each class. **4Marks**
- (b) Define the functions of log yard in a wood processing plant **4Marks**
- (c) What are the advantages and disadvantages of measuring logs by weight? **4Marks**

SECTION B: Answer any three questions (45 Marks)

- 3 (a) Discuss the following non-pressure treatment processes
- (i) Diffusion process **3Marks**
 - (ii) Deluging process **2Marks**
 - (iii) Bandaging process **2Marks**
 - (iv) Sap displacement process **2Marks**
- (b) Discuss the following pressure treatment processes using illustrations where possible
- (i) Full cell process
 - (ii) Rueping process **@3 =6 Marks**
- 4) (a) Discuss the following saw types citing advantages and disadvantages
- (i) Frame saws
 - (ii) Circular saws
 - (iii) Band saws **9Marks**
- (b) List the factors that affect volume yield of sawn timber **2Marks**
- (c) Using illustrations where possible discuss four wood drying defects **4Marks**
- 5) (a) What are the advantages of glulam products over solid wood? **4Marks**
- (b) Discuss in details the ideal log properties required for veneer production **5Marks**
- (c) Discuss the “Wet Process” used in the making of particle boards. **6Marks**
- 6) (a) Discuss the following pulping processes
- (i) Semi-mechanical pulping
 - (ii) Chemical pulping processes **6Marks**
- (b) State factors that affect quality of pulp **3Marks**
- (c) Describe the main stages of wood pyrolysis **3Marks**
- (d) Discuss the factors that influence the conversion yield of charcoal **3Marks**

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