



MAASAI MARA UNIVERSITY

REGULAR UNIVERSITY EXAMINATIONS

2023/2024 ACADEMIC YEAR

FIRST YEAR SECOND SEMESTER

**SCHOOL OF NATURAL RESOURCE,
ENVIRONMENTAL STUDIES & AGRICULTURE**

**BACHELOR OF SCIENCE IN SUSTAINABLE
FOREST MANAGEMENT**

COURSE CODE: SFM 1206-1

**COURSE TITLE: WOOD ANATOMY AND
IDENTIFICATION**

DATE: 14/5/2024

TIME : 1100-1300 HRS

INSTRUCTIONS TO CANDIDATES

Answer **All** the Questions in Section A and any **THREE** IN SECTION B
*This paper consists of **TWO** printed pages. Please turn over*

SECTION A (20 MARKS) ANSWER ALL THE QUESTIONS

SECTION A

1 (a) Differentiate between wood and woody lianas (3Marks)

(b) Outline the benefits and drawbacks of classifying timber using;

(i) Vernacular names and

(ii) Trade names.

(3Marks)

(c) Explain the meaning of the following terms as applied in Wood anatomy

(i) Wood texture

(2 Marks)

(ii) Wood figure

(2 Marks)

(iii) Growth rings

(2Marks)

2 (a) Discuss the two main groups of commercial timbers (2Marks)

(b) Differentiate between the following terms and use illustrations where possible.

(i) Sapwood and heartwood

(2 Marks)

(ii) Earlywood and latewood.

(2 Marks)

(iii) Vessels and Tracheids

(2 Marks)

SECTION B: ANSWER 3 QUESTIONS ONLY (30 Marks)

3 (a) List the advantages and disadvantages of the following methods of wood identification.

(i) Dichotomous key

(3Marks)

(ii) Multiple entry keys

(3Marks)

(b) Using illustrations describe any four (4) different vessel distribution patterns (4Marks)

4 (a) Describe the following wood anatomical features. Use illustrations where possible.

(i) Cell wall pits

(2.5 Marks)

(ii) Vessel perforation plates

(2.5 Marks)

(iii) Wood grains

(2.5 Marks)

(iv) Tylosis

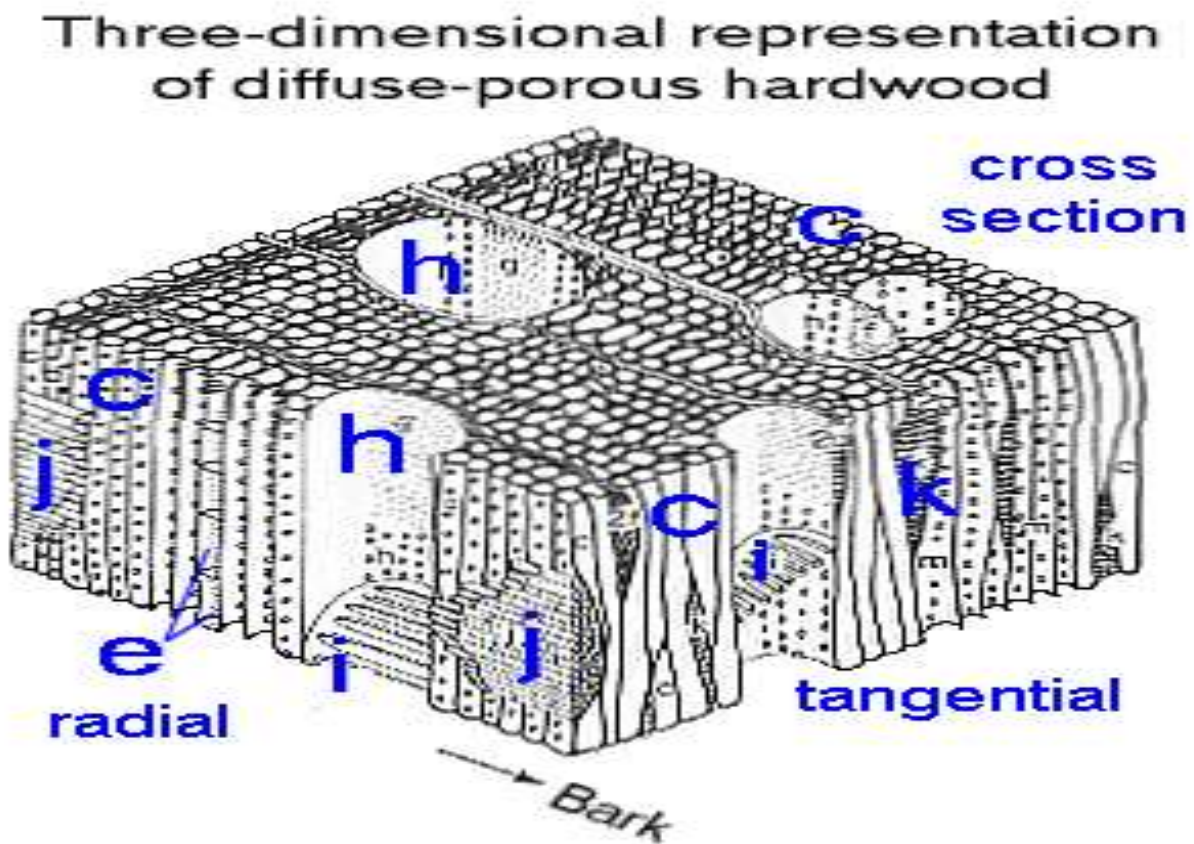
(2.5 Marks)

5 (a) Compare the physical properties of both reaction wood (Compression or Tension Wood) with those of normal wood. (6Marks)

(b) Figure 1 shows a three-dimensional diagram of a cube of secondary xylem of *Pinus halepensis*.

(i) Identify the parts labeled A, B, C, D, E, F, G, H, I (2Marks)

(ii) Explain the structural difference between parts labeled C and D. (2Marks)



6 (a) Describe the six (6) physical properties of wood as an industrial raw material (4Marks)

(b) Differentiate between homogeneous and heterogeneous wood ray cells. Use illustrations to support your answer (4Marks)

(c) Write short notes about initials Cells (2Marks)

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