AKENTEN APPIAH-MENKA UNIVERSITY OF SKILLS TRAINING AND ENTREPRENEURIAL DEVELOPMENT
INSTITUTE FOR TEACHER PROFESSIONAL DEVELOPMENT AND LIFELONG LEARNING (ITPDLL)
END OF FIRST SEMESTER EXAMINATION 2024/2025

COURSE CODE	**EJT 234**
COURSE TITLE	**WOOD TECHNOLOGY**

SECTION A (20 MARKS)

Each of the questions below is followed by four options, lettered A, B, C, and D. Choose the option that best completes each statement and write the letter A, B, C, or D of the option you have chosen in your Answer Booklet.

1. All the following are examples of hardwood **except** …….
   A. Ebony
   B. Mahogany
   C. Oak
   D. Pine
2. What is the main function of the cambium layer?
   A. Providing food for the tree
   B. Protecting the tree from damage
   C. Producing new woody tissue
   D. Storing water
3. Which of the following is NOT a method of veneer production?
   A. Molding
   B. Peeling
   C. Sawing
   D. Slicing

4. The outer protective layer of the tree is called.....
   A. Bark
   B. Cambium
   C. Heartwood
   D. Xylem
5. Which of the following best defines wood preservation?
   A. The application of varnish to improve aesthetics
   B. The process of making wood resistant to deterioration
   C. The natural ability of wood to resist decay
   D. The mechanical treatment of wood for industrial use
6. Which of the following best describes the effect of equilibrium moisture content (EMC) on wood?
   A. EMC is irrelevant in determining wood stability
   B. EMC refers to the percentage of bound water in wood
   C. Wood becomes completely dry when EMC is reached
   D. Wood stops absorbing or losing moisture when EMC is reached
7. What does the "MR" label on plywood indicate?
   A. Marine-resistant
   B. Moisture-resistant
   C. Metal-reinforced
   D. Mold-resistant
8. What is the primary role of timber recycling?
   A. Destroying used wood
   B. Encouraging deforestation
   C. Increasing timber demand
   D. Reducing waste and deforestation
9. Which method of applying preservatives is most effective for large-scale industrial wood treatment?
   A. Brushing
   B. Pressure impregnation
   C. Spraying
   D. Steeping

10. Which of the following best describes the role of lignin in wood structure?
    A. It binds wood fibers together and provides rigidity
    B. It enhances moisture absorption and drying speed
    C. It is the primary source of wood's color variation
    D. It is a chemical responsible for photosynthesis in wood cells
11. Which type of plywood is best suited for prolonged exposure to moisture?
    A. Composite plywood
    B. Exterior plywood
    C. Interior plywood
    D. Veneer plywood
12. What is a major disadvantage of creosote oil as a wood preservative?
    A. It is highly flammable
    B. It evaporates quickly
    C. It does not penetrate deep into the wood
    D. It is water-soluble
13. Which conversion method is best suited for producing timber that is less prone to splitting when nailed?
    A. Back Sawing
    B. Live Sawing
    C. Quarter Sawing
    D. Rift Sawing
14. What is the term for the moisture content at which all free water has been removed but bound water remains?
    A. Absolute dry point
    B. Equilibrium moisture content
    C. Fibre saturation point
    D. Saturation point
15. Which method is NOT used to determine moisture content in wood?
    A. Moisture meter
    B. Oven-drying
    C. Tensile testing
    D. Weighing before and after drying

16. Why is plywood preferred over solid wood for furniture making?
    A. It is heavier than solid wood and beautiful
    B. It warps easily in humid conditions
    C. It has uniform strength and dimensional stability
    D. It is difficult to cut and shape
17. A timber species with high tannin content is likely to ....
    A. absorb more water during seasoning
    B. be highly resistant to fungal and insect attacks
    C. decay faster
    D. have poor structural strength
18. Which of the following best describes the anisotropic nature of wood?
    A. It contains multiple layers of different materials
    B. It has the same properties in all directions
    C. Its properties vary in different directions
    D. It is artificially treated to maintain stability
19. Which conversion method is best suited for logs with uniform size and free from defects?
    A. Back sawing
    B. Live sawing
    C. Rift sawing
    D. Quarter sawing
20. Manufactured boards are primarily created to:
    A. Increase the cost of production to enhance the product's beauty
    B. Provide an alternative to solid timber with enhanced properties
    C. Reduce the weight of furniture
    D. Replace natural wood completely

SECTION B (5 MARKS)

This section contains statements. Write true or false for each of the following statements i
Questions 21 to 25

21. Creosote-treated wood is recommended for indoor furniture.
22. Illegally mined lands can be restored to their original state without intervention.

23. Kiln seasoning allows greater control over drying conditions compared to air seasoning.
24. The Industrial Revolution led to a decrease in woodworking machines.
25. Knots in timber are a result of seasoning defects.

SECTION C: MATCHING (5 MARKS)

This section contains two columns, columns A and B. You are to match items in Column A with those in Column B.

Match the following terms with their definitions in Question 26 to 30

	Term	Definition
26	Kiln Seasoning	Surface cracks caused by rapid drying.
27	Air Seasoning	A controlled drying method using heat and humidity control.
28	Checking	A method to speed up drying and reduce defects.
29	Stickers	Drying timber naturally in open air.
30	Pre-Steaming	Wooden strips used to separate timber layers.
		Method of packing timber for seasoning

SECTION D (10 MARKS)

Provide short answers to the following questions

31 The method of moisture content determination that is most accurate but slow is the .....

32 The method of sawing logs such that the growth rings form an angle of at least 45° with the board surface is called .....

33 The ..... system in the Middle Ages consisted of apprentices, journeymen, and masters.

34 Pine, fir, and spruce are all examples of ..... species.

35 The cambium layer is responsible for producing both xylem and ..... tissues.

36 The two main categories of wood preservative treatment methods are pressure treatment and .....

37 The major disadvantage of creosote oil is that it has a strong ..... and can cause staining.

38 A preservative that contains copper, arsenic, and chromium and is widely used in outdoor applications is known as .....

39 The purpose of using stickers in air seasoning is to separate timber layers for .....

40 Excessive drying in a kiln can cause internal cracks, a defect known as .....

SECTION E (20 MARKS)

Answer only One question from this section

41.

A. As student teacher with content knowledge, explain three (3) roles for learning the relevant foundational history, philosophy in Woodwork Technology play in understanding woodwork technology. [6 marks]

B. List five (5) properties of an ideal wood preservative. [5 marks]

C. Define the term seasoning in woodwork [3 marks]

D. Explain the following stages in wood processing.

i. Primary [2 marks]

ii. Secondary [2 marks]

iii. Tertiary [2 marks]

42.

A. List 4 factors that affect the Sustainability of our Forestry [4 marks]

B. Explain how the factors listed in question 2A affect our environment negatively [8 marks]

C. Elaborate four ways to Conserve Timber Resources [8 marks]

43.

A. State three (3) differences between softwood and hardwood [6 marks]

B. Draw the cross section of timber and label three (3) of its parts. [6 marks]

C. Explain the following terms in wood Technology.

i. Free water [2 marks]

ii. Bound water [2 marks]

D. Enumerate 4 reasons why woodworkers prefer the use of manufacture boards for cabinet work. [4 marks]