

## **MACHINE WOODWORKING**

### **EXAMINATION SCHEME**

There will be three papers, Papers 1, 2 and 3 all of which must be taken. Papers 1 and 2 shall be a composite paper to be taken at one sitting.

Paper 1: will consist of forty multiple-choice objective questions all of which are to be answered in 1 hour for 40 marks.

Paper 2: will consist of four short-structured questions. Candidates will be required to answer any three in 1 hour for 60 marks.

Paper 3: will consist of one practical question of 2 hours duration for 100 marks.

A list of materials for the test shall be made available to schools not less than two weeks before the paper is taken for material procurement and relevant preparations.

Paper 3: ALTERNATIVE TO PRACTICAL TEST

The Council may consider testing candidates' ability in practical work as prescribed in the syllabus in the event that materials for the actual practical test cannot be acquired. For this alternative test there will be one question to be answered in 2 hours for 100 marks.

### **SAMPLE QUESTIONS**

#### **PAPER 1 (OBJECTIVE)**

1. The part of the circular saw bench which is removed to give access for removing the saw blade is
  - A. swing knife.
  - B. crown guard.
  - C. extension piece.
  - D. finger plate.
  
2. Prevention of friction on woodworking machines is achieved by
  - A. rebating and dressing.
  - B. watering and cleaning.

- C. providing new surface.
  - D. greasing and oiling.
3. One basic function of a wood machinist is to
- A. move machines to new place.
  - B. sweep, clean and oil the machines.
  - C. repair all machines.
  - D. set wide band saw blade.
4. The use of a swing knife reduces
- A. kick direct.
  - B. kick front.
  - C. kick back.
  - D. accidents.
5. When ripping a workpiece on a circular saw, the minimum gap above the piece should be
- A. 6mm.
  - B. 10mm.
  - C. 15mm.
  - D. 20mm.
6. The process of seasoning in which timbers are stacked under an open shade with the application of heat is
- A. kiln.
  - B. air.
  - C. dry.
  - D. wet.
7. Defect in timber is defined as anything that
- A. reduces the weight of wood.
  - B. adds to the weight of wood.
  - C. reduces the quality of wood.
  - D. enhances the quality of wood.

8. Creosote is a type of

- A. reagents.
- B. preservatives.
- C. driers.
- D. grinders.

**PAPER 2 (SHORT STRUCTURED QUESTIONS)**

1. (a) Make a freehand sketch of the cross section of a tree.
- (b) Label **four** parts of the sketch in (a).
- (c) State **three** advantages of kiln seasoning over natural seasoning of timber.
- (d) Make a freehand sketch of the method of conversion that would retain shape after seasoning.
- (e) List **two** defects each under the following:  
(i) growth;  
(ii) grain;  
(iii) seasoning.
- (f) (i) List the **two** types of pressure processes of preserving timber.  
(ii) Describe **one** of the processes listed in (f) (i).
2. (a) State **four** general machine safety rules.
- (b) State **four** safety precautions that should be observed before operating a circular saw machine.
- (c) List **one** specific use of each of the following safety equipment in the wood machine shop.  
(a) sand bucket;  
(b) fire extinguisher;  
(c) first aid box;  
(d) fire alarm.
3. (a) Recommend **two** sources of funds for:

- (i) starting up a wood machine shop business by a sole proprietor (personal savings, co-operatives, thrifts)
  - (ii) increasing the capital tax of a limited liability wood machine shop enterprise (selling shares, bank loans)
- (b) The table below presents **four** possible business opportunities in machine woodworking.

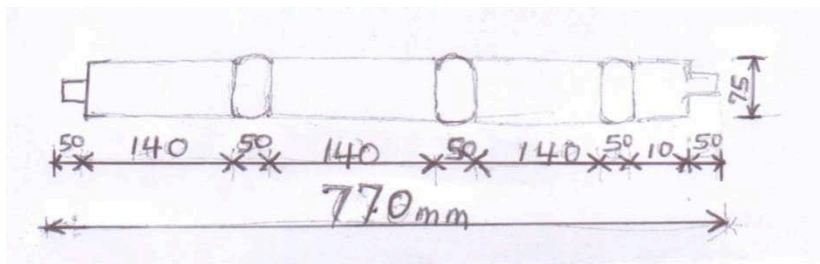
List **two** appropriate woodworking machines needed for each of the listed business areas.

S/NO.	Business opportunities	Recommended machines
1	Frame construction	
2	Flooring boards	
3	Chair making	
4	Turnery	

- (c) State the use of **each** of the following documents in the operation of a wood machine shop business:
- (i) Job card
  - (ii) Production schedule
  - (iii) Delivery note
  - (iv) Purchase order.

### PRACTICAL

The figure below shows a turned baby cot rail to be produced to the finished size of 45mm x 45mm x 770mm. Use it to answer questions 1 to 5.



1. State the rough sizes of the wood to be used.

2. List **three** machines required to produce the rail.
3. State **two** safety precautions to be observed on each of the machines listed in question (2)
4. Using the table below, state:
  - (i) in sequence the operations involved in producing the rail.
  - (ii) the tools required for each operation.
  - (iii) the safety precautions to be observed during each operation.

Operation	Tools Required	Safety Precautions

5. (a) Calculate the number of rails that can be obtained from a board of 50mm x 300mm x 3,600mm.
  - (b) If the board costs N4,000.00 what is the cost of one rail?

