

CARIBBEAN EXAMINATIONS COUNCIL

REPORT ON CANDIDATES' WORK IN THE  
SECONDARY EDUCATION CERTIFICATE EXAMINATION

MAY/JUNE 2010

BUILDING TECHNOLOGY  
OPTION 1 – WOODS  
TECHNICAL PROFICIENCY

## GENERAL COMMENTS

The number of candidates sitting the examination was approximately 1,776 and 83 per cent of them received Grades I–III. Candidates did quite well on the practical project of the School-Based Assessment (SBA) but some were weak in the written project. Competencies requiring focused attention are Knowledge and Application which are tested on Paper 01 (Multiple Choice) and Paper 02 (Essay/Structured Response/Problem-Solving Questions).

## DETAILED COMMENTS

### Paper 01 – Multiple Choice

Candidates' performance on this paper improved marginally above that of 2009. Based on the common selection of certain items, the need for greater coverage of the theoretical aspects of the unit cannot be overemphasized.

### Paper 02 – Structured Response /Essay Questions

Paper 02 was a structured response paper with three sections namely, A, B, and C.

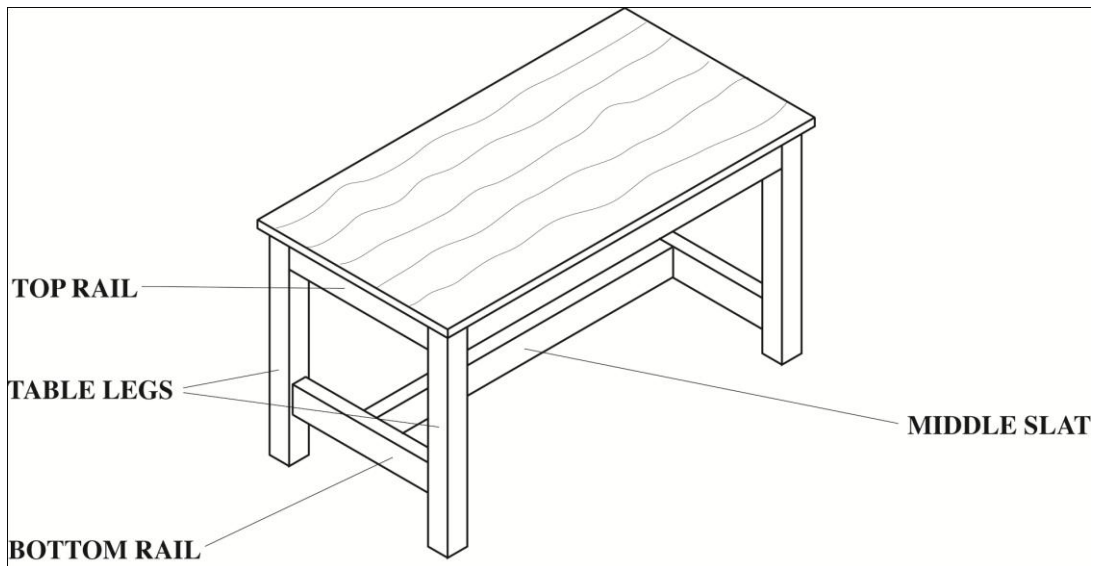
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| Section A | This section had a compulsory question based on Module C7.1– Introduction to Drawing. The question was worth 40 marks.  |
| Section B | This section comprised five questions based on Modules C2, C3, C5, C6.1—Materials— and C6.2—Ironmongery. Candidates were required to attempt three questions from this section.                                   |
| Section C | This section had three questions based on Modules C4, Upholstery, Module 6.3, Basic Cabinet Making, and Module C6.7, Household Furniture. Candidates were required to answer only one question from this section. |

The mean score on this paper was 51.21 out of a total of 120 marks.

### Section A

#### Question 1

This question, based on Module C7—Drawing and Design—was compulsory. For Parts (a) and (b), primary focus was given to Objectives C7.1:5–7 from the Introduction to Drawing section of the module while Parts (c) and (d) focused on Objective C7.2:5 from the Introduction to Design section. The question required candidates to demonstrate drawing and design skills using either free hand or ruler-assisted sketches. Candidates were presented with a pictorial view of a small work table with the structural framing to be designed using timber. The dimensions for the table were: length – 1250 mm, width – 600 mm and height – 750 mm. The table top should be built using 19 mm plywood and finished with plastic laminate.



**Figure I. A Small Work Table**

Part (a) required candidates to show the following orthographic views of the table:

- i. A typical front elevation
- ii. A typical plan view showing all main hidden details
- iii. A typical end view

In Part (b), candidates were required to indicate the title and add two main dimensions for each orthographic view produced.

For Part (c), candidates were asked to name and sketch the most suitable joint to show the

- i. connection of the table leg and bottom rail
- ii. connection of the middle slat and bottom rail
- iii. connection between the top rail and table leg.

In Part (d), candidates were required to produce a sketch to explain one procedure that could be used to fasten the table top to the frame. Most candidates scored 60 per cent or more of the marks allocated to this part of the question.

In response to Parts (a) (i), (ii) and (iii), 60 per cent of the candidates were able to correctly interpret the drawing and produce the required orthographic views. However, some candidates showed weaknesses in distinguishing between orthographic and pictorial views or front elevation and end elevation.

In Part (b) (i), most candidates were able to correctly identify and label the views required. A few of the candidates did not include the titles for the orthographic sketches that they produced.

For Part (b) (ii), some of the candidates were not able to appropriately dimension the sketches to show two main dimensions. Some candidates did not score well in this areas as they either did not give dimensions or gave unrealistic dimensions.

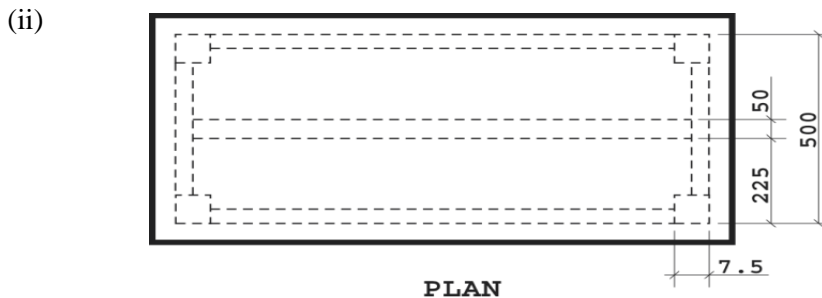
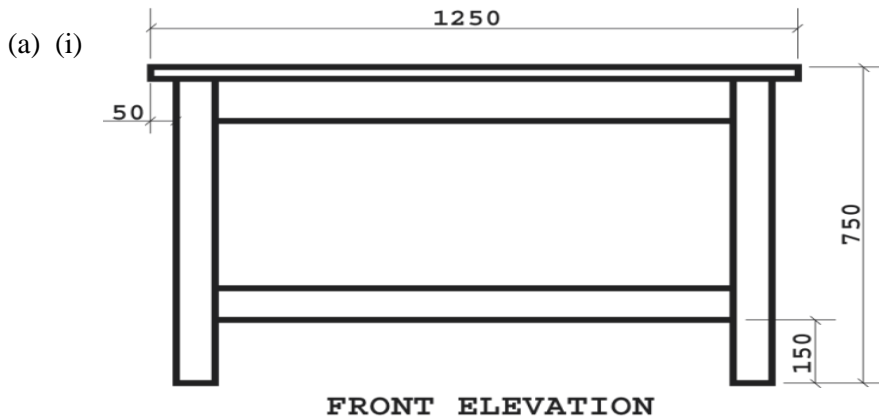
In Part (c), most of the candidates provided satisfactory responses. They were able to sketch suitable joints for the connection at (i) or (iii) respectively. However, some candidates found it difficult to indicate the most appropriate joint at (ii) to show the connection of the middle slat and bottom rail. Some candidates sketched other joints for the connection which were not designed to resist the lateral pressure which may be encountered between these two members. In general, many candidates identified a range of joints of varying suitability but were not able to illustrate them with either pictorial or orthographic sketches.

The use of appropriate models and artifacts to illustrate the use of joints in specific applications need to be reinforced in the classroom. Models in either assembled or exploded forms should be kept on display in the workshops and used as teaching aids and for reference purposes. Candidates should also be taught good sketching skills and be allowed to practise these skills and produce pictorial and orthographic views of various woodwork components.

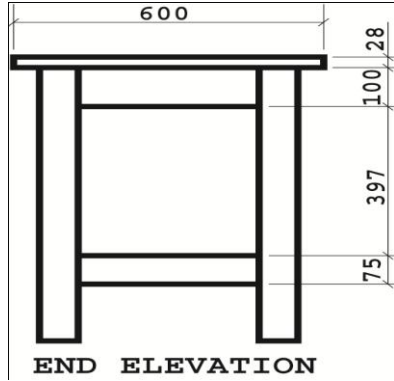
In Part (d), candidates performed fairly well. They were familiar with fastening principles required to anchor the table top to the frame but failed to produce suitable sketches to illustrate them.

Candidates should be given sufficient time to communicate their understanding of the components of Cabinetry and Furniture Construction in graphical form.

The expected responses to question 1 were:



(iii)

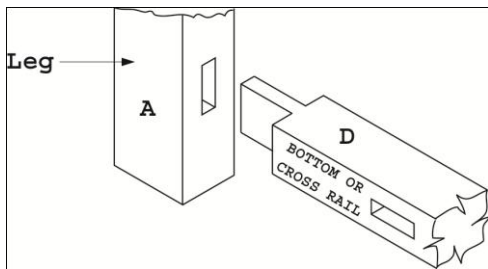


(b) (ii) Typical dimensions are as follows:

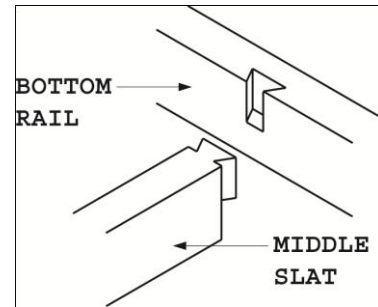
- Top length – 1250 mm
- Width – 600 mm
- Height – 750 mm
- Frame – 1150 x 500 mm
- Overhang – 25 to 50 mm
- Table top thickness – 19 mm
- Leg – 50 to 75 mm

(c)

(i)

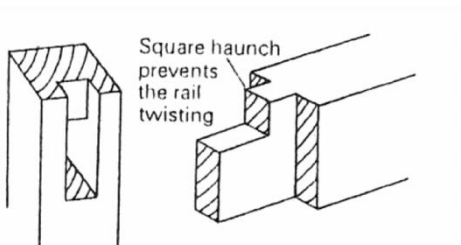


(ii)



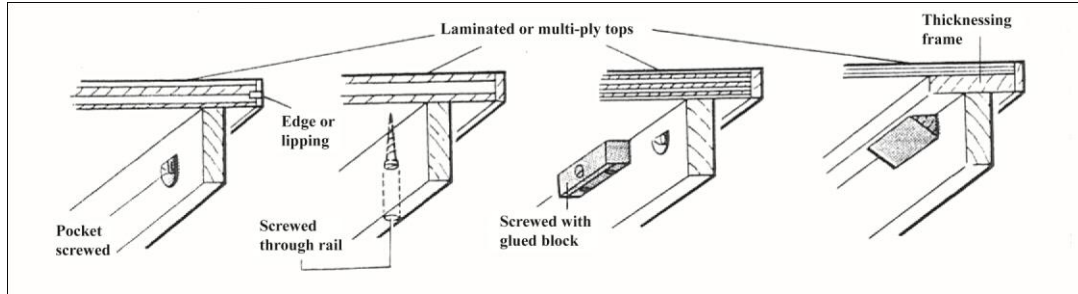
**Mortise & Tenon Joint**

(iii)



**Haunch Mortise & Tenon joint**

(d)



## Section B

### Question 2

This question assessed candidates' knowledge and application of Module C2—Hand Tools and Bench Work. Specific focus was given to the objectives under Module C2.1—Planning and Layout—in relation to layout tools.

Part (a) (i–v) required candidates to state two uses each of the Try square, Sliding bevel, Marking gauge, Mortise gauge and Marking knife.

The general responses to this part of the question indicated that most of the candidates were familiar with layout tools and had a fair understanding of their uses in furniture work. However, some candidates could not distinguish between the use of the mortise and marking gauge while others had difficulty indicating the use of the sliding bevel.

Based on the responses to this question, it is necessary for students to spend quality time on the layout component of projects they undertake in the workshop. This will help them to better appreciate the use of various layout hand tools. In addition, greater emphasis needs to be placed on helping students to correctly use layout tools to produce joints, shapes and intricate designs on wood surfaces.

For Part (b), candidates were asked to produce neatly labelled sketches of three of the tools indicated in Part (a).

More than 50 per cent of the candidates were not able to use suitably labelled sketches to decipher between the marking gauge and mortise gauge respectively. This resulted in some candidates producing poor responses to this part of the question.

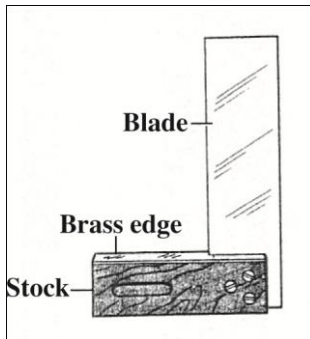
The expected responses to Question 2 were:

2 (a)

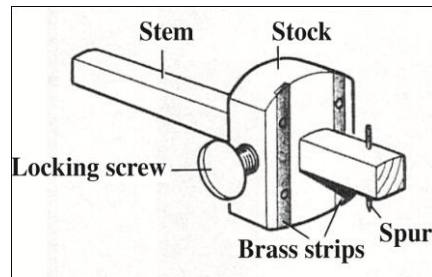
- (i) **Try Square**—used for *marking lines at right angles (90 degrees) to surfaces and for checking the squareness of framework being assembled.*
- (ii) **Sliding Level**—used for *marking dovetails and for testing bevels and chamfers.*
- (iii) **Marking gauge**—used for *marking lines along the grain, these lines being parallel to a given surface. Use for marking parallel lines when bringing wood to uniform width and thickness.*
- (iv) **Mortise gauge**—used for *marking double parallel lines for tenons, mortises, bridle joints and grooves.*
- (v) **Marking knife**—used for *razor edge marking of lines for dovetail and housing joints.*

2 (b)

**Try Square**



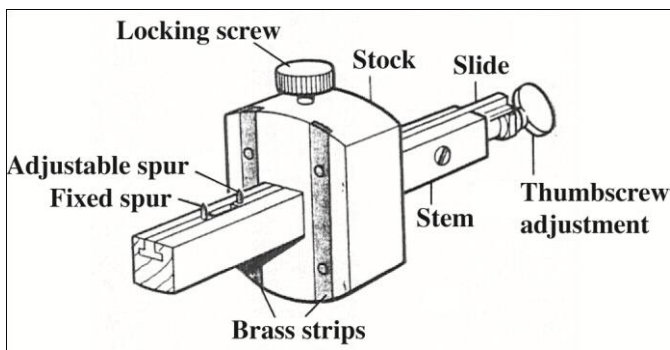
**Marking Gauge**



**Sliding Bevel**



**Mortise Gauge**



**Marking Knife**



Question 3

This question targeted Module C3—Machine Operations—of the syllabus. Candidates' knowledge and application of the wood-turning lathe was assessed based on objectives related to safety practices, uses and turning principles.

Part (a) required that candidates list five safety rules that should be observed when operating the wood turning lathe.

For Part (b) candidates were required to state five items that may be produced on the wood turning lathe.

In Part (c), candidates were required to explain five operational procedures required for preparing and fixing wood stock between the live and dead centres of the lathe for turning.

More than 60 per cent of the candidates who responded to Part (a) were able to state appropriate safety rules to be adhered to when operating the lathe. Nevertheless, some candidates were unable to respond appropriately regarding safe practices to be followed when preparing to use the lathe.

If candidates are to perform operations such as spindle turning and faceplate turning on the lathe they must be fully cognizant of the safety rules governing its use. Thorough explanations need to be given regarding safe practice in the use of the wood-turning lathe among other machines in the workshop. Greater emphasis should also be placed on the varied uses and correct procedures to be followed in operating the lathe. In addition, the instructional process will have to entail frequent demonstrations and regular supervised practice. Observation of safety in using this and all woodwork machines must be emphasized at all times.

The responses to Part (b) clearly indicated that this part of the question was well favoured by the candidates. Only a few candidates found it difficult to identify the five different items correctly.

Part (c) of the question was fairly well done as approximately 50 per cent of the candidates were able to explain the procedures required in preparing and fixing a piece of stock for turning on a wood turning lathe.

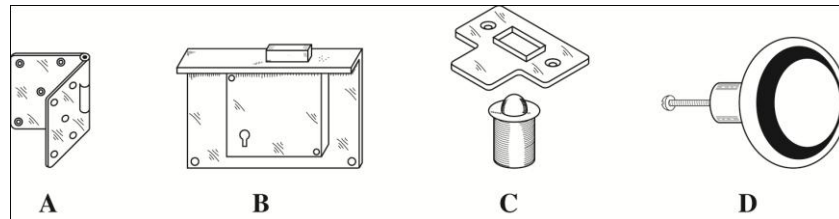
Responses to this question include the following:

- (a) Safety rules that should be observed when preparing to operate the wood turning lathe.
  - (i) Do not wear loose fitting clothing or jewelry which could get caught in the revolving stock.
  - (ii) The tail stock should be checked to ensure that the stock is tight.
  - (iii) Position the tool rest so that it suits the cutting action of the wood turning tool.
  - (iv) Ensure that the motor speed is the correct one for the size of stock being turned.
  - (v) Goggles or face shields must be used to protect the operator from flying chips.
  - (vi) Avoid resting unused tools on the lathe as they might cause injury or become damaged when they fall.
  
- (b) Items which may be produced on the lathe
  - (i) Rolling pins
  - (ii) Table legs
  - (iii) Lamp stems
  - (iv) Fruit bowls
  - (v) Cups
  - (vi) Tool handles
  
- (c) Steps involved in preparing and fixing stock between the live and dead centres
  - (i) Square and mark diagonals at both ends of the stock to be turned.
  - (ii) Use a bradawl to make starter holes at the centre of the diagonal lines at each end.
  - (iii) For hardwoods, make saw kerfs in one end to receive the pronged or live centre. For softwoods use a mallet to knock the pronged centre in one end of the stock.
  - (iv) Insert the shank of the pronged centre in the headstock spindle and slide down the tail stock.
  - (v) Carefully position the dead centre in the hole made by the bradawl.
  - (vi) Lock the tailstock then adjust the dead centre into the wood by tightening with the tailstock hand wheel.
  - (vii) Test grip by spinning with the hand and make necessary adjustment to prevent binding at the dead centre.

#### Question 4

This question assessed candidates' knowledge and application of Furniture Construction—Ironmongery Module C6.2. The specific sub-modules tested were C6.2:1, C6.2:3 and C6.4:6 respectively.

In Part (a), candidates were asked to list the correct names for the ironmongery labelled as **A–D** in Figure 2.

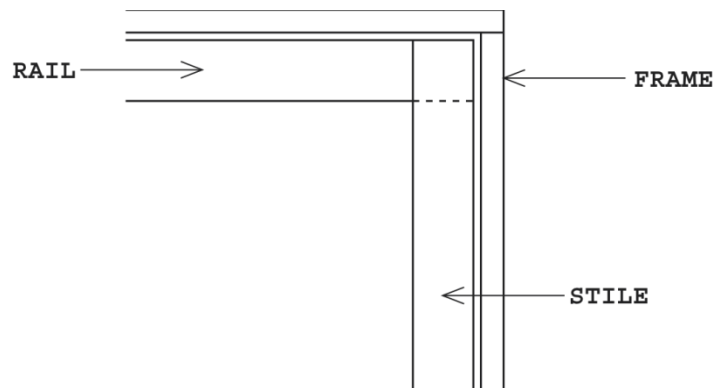


**Figure 2. Types of Ironmongery**

For Part (b), candidates were required to satisfy two requirements, namely:

- produce neat, labelled sketches of the Tee Hinge, Butt Hinge and Decorative Hinge
- indicate the most suitable use for each hinge

For Part (c) (i), candidates were asked to reproduce the sketch given in Figure 3 to show the position of the butt hinge indicated in (b) (ii).



**Figure 3. Door and Frame**

Part (c) (ii) required candidates to indicate the correct height for the hinge from the top of the door to the upper part of the hinge.

For Part (a), candidates had some difficulty supplying the correct name for the ironmongery labelled **B** which represents the cupboard lock. Many candidates confused this lock with a typical mortise lock.

Candidates need to be able to distinguish among various types and uses of locks, and correctly select locks for household uses. Most of the candidates were able to satisfactorily state the names of the ironmongery labelled **A**, **C** and **D**. The responses indicated that they were more familiar with these types of ironmongery.

Part (b) was generally well known to candidates. Most candidates were able to score satisfactory marks on this part of the question. Some of them showed weaknesses in sketching the types of hinges.

If candidates are to obtain maximum scores on items involving the production of neat, well-proportioned sketches of ironmongery among other components, much practice in sketching is required.

Part (c) (i) was satisfactorily done by candidates who were familiar with the use and installation of the butt hinge. Candidates were able to position the hinge correctly between the stile and frame.

For Part (c) (ii), most candidates were able to indicate the correct height of the hinge in reference to the door top.

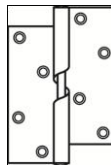
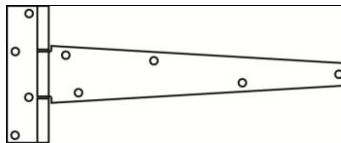
The expected responses to this question were:

(a)

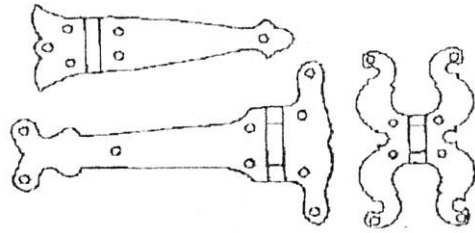
- A) Back flap hinge
- B) Cupboard lock/Drawer lock
- C) Ball catch
- D) Cupboard Door Knob/Handle

(b)

i. **Tee hinge:** This hinge is mainly used for out-building doors such as barns, storage rooms and gates.



ii. **Butt hinge:** This is used on panel and flush doors to secure them to their frames without the screws being exposed.



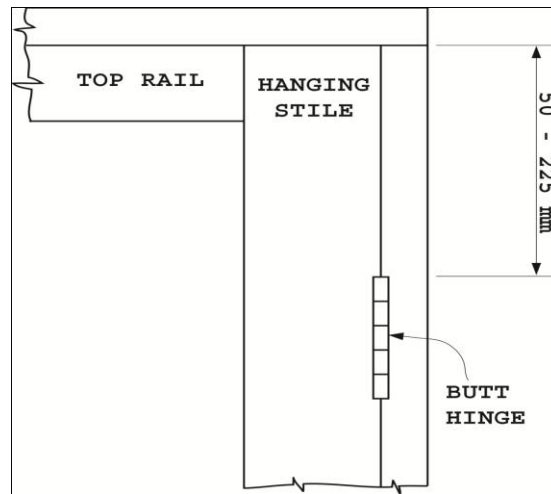
iii. **Decorative hinges:** As their name suggest, these are special hinges that may be used on house doors, cabinet doors, the lids of chest wardrobe fitments etc.

(c)

(i)

(ii)

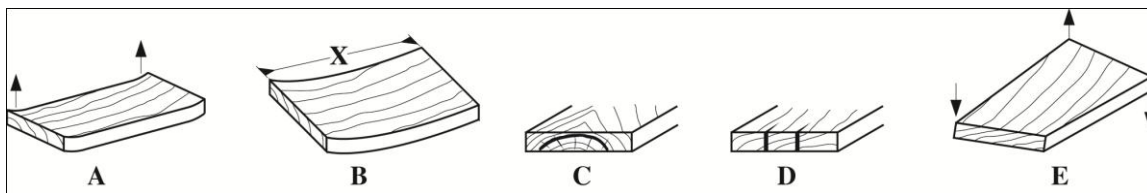
Height range  
50 – 225 mm



### Question 5

The objectives of this question, based on Module C6.1 of the syllabus, materials, were to test candidates' knowledge of the types of defects commonly occurring in timber as well as the anatomy of a tree.

Part (a) asked candidates to state the names of the five types of defects labelled A–E in Figure 4.



**Figure 4. Types of Wood Defects**

For Part (b) (i–iii), candidates were required to produce a typical sketch of the cross-section of a tree trunk and identify the annual rings, the heartwood and cambium layer.

Part (c) required candidates to explain the function of the leaves, cambium, bark, heartwood and sapwood in relation to the growth of the tree.

For Part (a), most candidates found it difficult to identify the diagram showing the defect labelled as 'B'.

Most candidates scored well on Part (b) in that they were able to produce the sketch desired and indicated the correct locations of the annual rings and the cambium. Some candidates seemed to confuse the position of the heartwood with the sapwood. The position for the heartwood was therefore incorrectly indicated in some instances. This resulted in a few of the candidates failing to receive maximum marks for this part of the question.

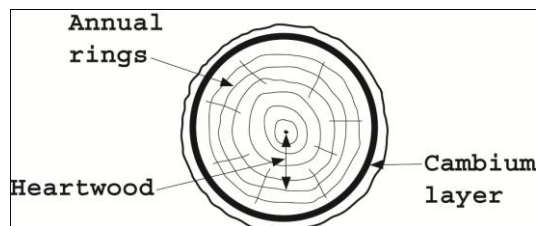
Part (c) was generally well done. Candidates' responses to this part of the question indicated that they were very familiar with the anatomy of a tree and how the function of each part contributed to the growth of the tree.

The expected responses to this question were:

(a)

- A Bowing
- B Spring
- C Cup-shake/Ring Shake
- D End splits, Split/check
- E Winding/Twisting

(b)



(c) The **leaves** take in carbon dioxide from the atmosphere. Photosynthesis takes place because of the sunlight and this assists in the production of food for the tree.

The **cambium layer** lies between the bark and the wood and forms the new wood and new bark as a result of the enlargement and division of the cells, both radially and tangentially.

The **bark** protects the living bark from sudden temperature changes, prevents the evaporation of water, the entry of injurious insects and protects the tree from injury by animals.

The **heartwood's** purpose is to support the tree and is the part of the tree most resistant to decay and attack by insects and fungi.

The **sapwood** allows the transportation of mineral salts to all parts of the tree.

### Question 6

This question assessed candidates' familiarity with Module C5—Finishes candidates were required to demonstrate their knowledge of the types, components and application of various types of finishes.

Part (a) of the question required candidates to list three types of furniture finishes. For Part (b), candidates were required to state three reasons for applying finishes to furniture.

Part (c) (i–ii) asked candidates to list four ingredients required for the manufacture of paint and to state ONE function of each ingredient given.

In Part (d) (i), candidates were required to provide brief explanations of the steps to be followed in preparing wood surfaces for paint. Part (d) (ii) required candidates to outline three steps to be adhered to achieve quality painted surfaces.

Approximately 70 per cent of the candidates who attempted this question were able to provide satisfactory responses. There were clear instances where candidates found it difficult to decipher between preparatory finishing materials and final finishes.

Candidates must be able to clearly distinguish between materials required to prepare surfaces for a desired finish as opposed to those to be applied following preparatory work.

The general response to Part (b) was poor. Candidates did not rationalize well in stating three important reasons for the application of finishes.

Part (c) (i) was satisfactorily done. Candidates were able to identify the appropriate components used in the manufacture of paints. Part (c) (ii) presented difficulty for some candidates as they were not able to explain the function of each component in the manufacturing process of paint.

Candidates need to be fully aware of the components and manufacturing process used to acquire various finishes if they are to be able to use them safely. Finishes such as oil-based paint and varnish for example, with flammable and toxic properties, must be known to candidates who must interact with these materials.

While Part (d) (i) was satisfactorily done by most candidates, they encountered difficulty with Part (d) (ii) in which they were required to explain the steps needed to achieve quality painted surfaces. Much practice in the use of applied finishes should be encouraged in the workshop. The knowledge to be gained will enable candidates to proficiently apply various finishes to both interior and exterior furniture to marketable standards.

The expected responses to this question were:

(a) Types of furniture finishes

1. Paint
2. Varnish/polyurethane
3. Wax polish
4. Clear lacquer
5. Wood stains
6. Sealer
7. Shellac
8. Linseed oil
9. Teak oil
10. Plastic laminate

(b) Reasons for applying finishes to furniture:

1. It preserves the life of the material by protecting it from moisture and other elements.
2. It enhances the appearance of the material being coated especially if the material does not possess an attractive grain structure.
3. Protective coverings such as varnish and oil-based paints provide a surface that can be easily cleaned.

(c) (i) Four paint ingredients/components

1. Drier
2. Pigment
3. Solvent
4. Binder/Vehicle

(c) (ii) The function of the ingredients/components

**Drier**—these are substances added to oils to speed up oxidation and the curing process.

**Pigment**—this is a fine powder added to a liquid base to provide colour.

**Solvent**—this is a liquid mixture which dissolves certain materials.

**Binders on Vehicles**—this provides the suspension flush for the pigment and also act to bind the pigment to the surface being provided.

(d) (i) Three steps to be followed in preparing wood for painting (any three of the following)

1. Remove loose knots and plug the holes with wood pellets/filler.
2. Punch any nail holes below the surface.
3. Fill all indentations with wood filler/putty.
4. Sand properly using appropriate grade sandpapers.
5. Treat knots with a coat of shellac polish to prevent resin exuding.

(d) (ii) Steps to achieve quality painted surfaces

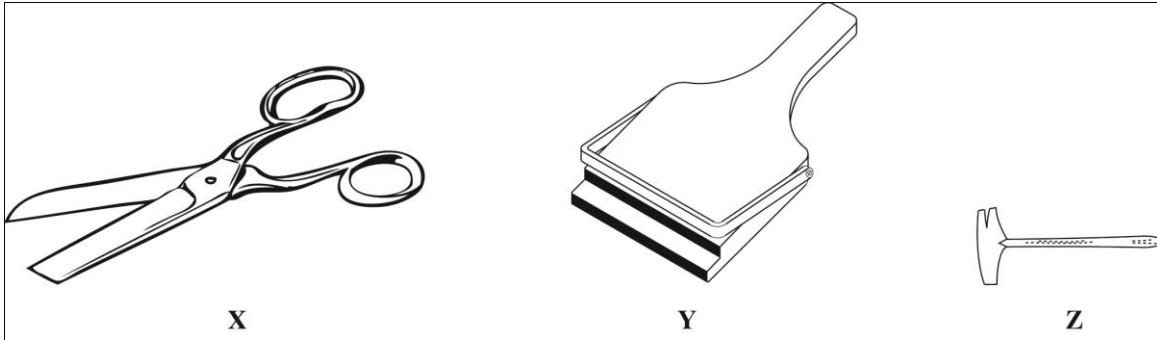
1. **Primer coating:** This first coating should be well worked into the material to provide a base for the subsequent coatings. Filling and light sanding are required.
2. **Undercoating:** Apply two coats of coloured matte/undercoating paint. Lightly sand with very fine grade sandpaper to maintain a smooth surface between coats.
3. **Top/Final coating:** The final coating should be applied once the undercoating has sufficiently dried. It can be applied either by a brush or a spray gun.

## Section C

### Question 7

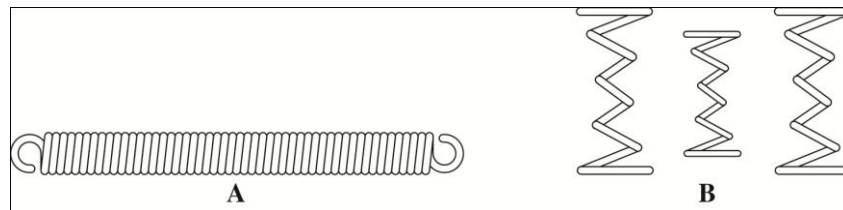
This question required that candidates demonstrate their knowledge of Module C4—Upholstery—with primary focus on Module C4.1—Tools and Materials.

Part (a) assessed candidates' general knowledge of the types and uses of upholstery tools. In Part (a) (i), candidates were given three upholstery tools in Figure 5 and asked to state the name for each, while Part (a) (ii) required that they state the function of these tools for upholstery work.



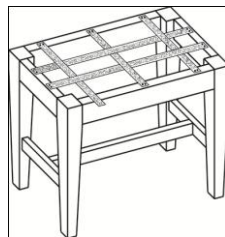
**Figure 5. Upholstery Tools**

Part (b) assessed candidates' knowledge of upholstery material. In Part (b) (i), candidates were given two diagrams in Figure 6 showing springs used for upholstery work and asked to state the name for each, while Part (b) (ii) required that they state how each was specifically used for this craft.



**Figure 6. Upholstery Springs**

Part (c) assessed candidates' ability to outline, in correct sequence, five steps for making and fitting a padded seat for the stool given in Figure 7.



**Figure 7. Frame of Stool with Webbing in Place**

Part (a) (i) was widely known. Candidates who responded to this part of the question readily identified the tools labelled X and Z but found great difficulty recognizing the tool labelled Y. Part (a) (ii) of the question was generally well done. Candidates knew the functional requirements for the tools they identified.

Most candidates misinterpreted the tool labelled **Y** for a paint brush. Their responses disclosed that they were not familiar with its use for general upholstery work.

For Parts (b), (i) and (ii), candidates were able to identify the spring labelled **A** but many had difficulty labelling spring **B**.

Candidates' responses to Part (b) (ii) were poor. This may be a result of their inability to readily identify the springs shown in Figure 6. The difficulty experienced by candidates affected their ability to correctly indicate the function/application of Spring **B** in particular, for upholstery work. Greater effort needs to be placed on the Upholstery Module of the syllabus if candidates are to perform well on the questions related to it.

Part (c) (ii) was satisfactorily done by most candidates.

Systematic instruction should be given to candidates to enable them to appropriately apply the principles and techniques required for the production of upholstery work. Visits to factories and workshops would also help candidates to observe how upholstery skills are applied.

The expected responses to this question were:

(a) (i)

X – Shears/Scissors

Y – Strainer/ Web Stretcher/Tensioning Tool

Z – Tack Hammer

(a) (ii)

**Shears** are used for cutting fabrics

**Strainers** are used for tensioning webbing

**Tack Hammer** is used for driving and removing tacks and nail

(b) (i)

A – Tension Spring

B – Coil Spring

(ii)

Coil spring – used in high quality work and installed vertically

Tension spring – used in cheaper furniture and installed horizontally

(c) Five sequential steps to make and fit padded seat to frame are:

1. Cut hessian 25 mm larger than top.
2. Strain hessian over the edges and secure with tacks.
3. Select padding (foam/sponge) and cut 4–6 mm larger than stool.
4. Measure and cut suitable covering material to cover the padding and extend beyond the thickness.
5. Secure padding with tacks.

### Question 8

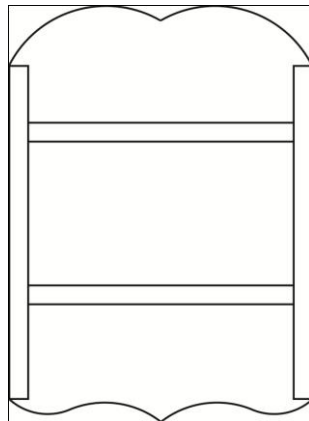
This question assessed candidates' knowledge and application of Module C6.4 — Household Furniture. Objectives tested from this module were C6.4:4 and C6.4:5, respectively.

Part (a) (i) required candidates to name and produce sketches of suitable widening joints that could be used to join boards to achieve a table top width of 900 mm. For Part (a) (ii), candidates were asked to name the tool used to hold boards when making widening joints.

In Part (b), the elevation of a wall shelf made from solid timber boards was given in Figure 8.

Candidates were asked to

- (i) give the name for a joint that is suitable to join the shelves to the vertical sides of the shelf and
- (ii) explain, with the aid of sketches, three steps required to make this joint.



**Figure 8. Wall Shelf**

Many of the candidates who responded to Part (a) (i) were able to name and produce three suitable sketches of appropriate widening joints applicable to achieve the width of 600 mm required for the table top. Candidates also responded well to Part (a) (i).

For Part (b) (i), candidates' responses were satisfactory. Their responses confirmed that they were quite knowledgeable of the use of various joints that were appropriate to join the shelves to the sides of the shelving unit.

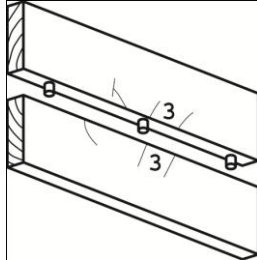
Part (b) (ii) was not well done. Candidates found it difficult to adequately explain, with the aid of illustrations, three steps to be taken to produce the housing joint.

It is imperative for candidates to obtain adequate shop practice in the fabrication of various woodworking joints. This knowledge should assist them to select and produce appropriate joints for various components required in both cabinet making and household furniture.

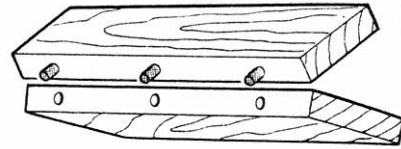
The expected response to this question were:

- (a)
- (i) Names and sketches of three typical widening joints

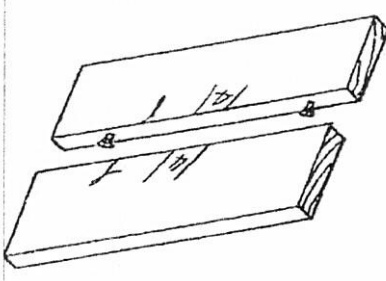
Dowelled joint



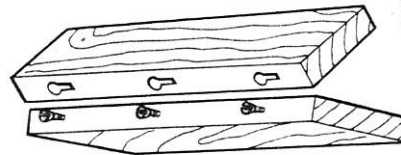
Alternate sketch



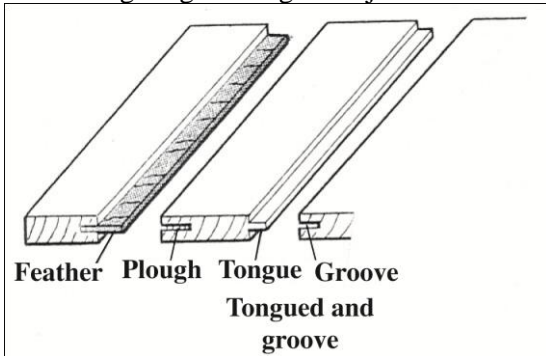
Slot-screwed joint



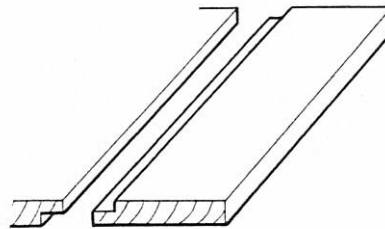
Alternate sketch



Long tongue and groove joint



Rebated Joint

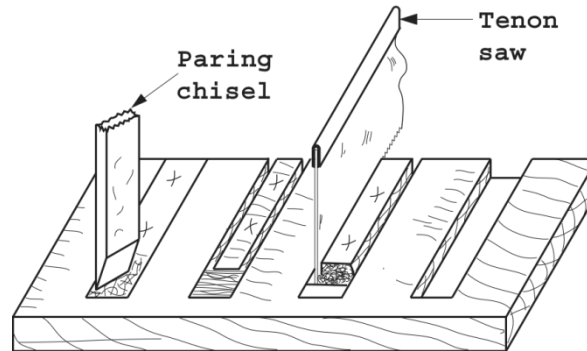


- (a)
- (ii) **Sash Cramps** can be used to hold the boards together.
- (b) (i) Stopped housing/through housing joint

(b) (ii) Steps required to make the joint named in b (i)

1. Layout the trench leaving space for the stop.
2. Layout the shelf removing the space for the stop.
3. Cut the clearance hole with a chisel.
4. Saw the sides.
5. Remove waste with a paring chisel.
6. Level the bottom with hand router.

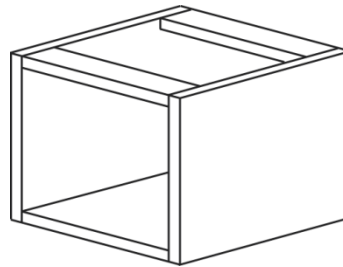
(b) (ii)



**Diagram showing steps to produce a Housing Joint**

### Question 9

This question assessed the objectives and content detailed in Modules C6.3 – Cabinet Making. Specific sections addressed were C6.3:2 and C6.3:4. Candidates were presented with a drawing of a cabinet frame in Figure 9 representing a bathroom cupboard.



**Figure 9. Frame for a Bathroom Cupboard**

In Part (a) (i), candidates were required to state three suitable materials for making the top for the cabinet. Part (a) (ii) assessed their ability to choose three waterproof finishes suitable to overlay a wooden top.

Part (b) (i) assessed candidates' ability to describe four processes to be followed to fabricate the top to fit the cabinet frame. Part (b) (ii) assessed candidates' understanding of six steps to be followed to apply a waterproofing material to the wooden top indicated in (a) (ii).

For Part (b) (iii), candidates were required to state four reasons special care should be taken when selecting a wooden product for use in the bathroom.

For Parts (a) (i) and (ii) approximately 50 per cent of the candidates were able to identify suitable materials to fabricate the cabinet top but were unable to provide appropriate responses of suitable materials to be used for waterproofing it.

The responses of candidates who attempted Part (b) of the question were not convincing. Many of them could not adequately explain the procedures required for (b) (i) and (ii) correctly, and, in some cases, confused the processes.

For Part (b) (iii), approximately 50 per cent of the candidates provided suitable reasons for the need to be precautious in selecting wood product for use in the bathroom.

In addition to the preparation of materials list and bill of quantities, projects undertaken by students will require them to conduct even deeper planning and analysis so work can be organized logically. This will include careful study of environmental factors such as moisture content which may impact material resources available to them. These phases should supersede students' engagement in the fabrication and finishing processes. Much time therefore needs to be spent on product or project analysis to cement these vital skills.

In addition, time also needs to be spent on the execution phases of projects. All projects to be undertaken by students could be designed in such a way that they mirror the requirements of the School-Based Assessment. This approach should give students the opportunity to develop an even greater understanding and appreciation for the processes involved in design and production as used by furniture manufacturers. This will also enable them to make a smoother transition to the workplace.

The expected responses to this question were:

(a) (i) Materials suitable for making the top of the cabinet

1. Plywood
2. Marine plywood
3. Granite
4. Concrete board
5. Solid timber

(a) (ii) Water proofing materials that can be used to cover a wooden top

1. Plastic laminate
2. Plastic coating
3. Tiles
4. Paint
5. Varnish

(b) (i) Processes for preparing the top to fit the cabinet

1. Measure to correct length and width of top
2. Layout overlaps
3. Square and cut material to correct size
4. Cut out opening for the basin
5. Fit the top to the cabinet

(b) (ii) Processes for affixing the waterproofing material to the wooden top

If plastic laminate is used as surface finish:

1. Cut strips for edges
2. Glue on strips
3. Trim strips flush with the top
4. Spread contact glue on the top and laminate and allow to dry to touch
5. Affix laminate to top
6. Trim the edges

OR

If clear/transparent finish is used as surface finish:

1. Fill holes/cracks
2. Sand
3. Seal/prime surface
4. Sand/wipe
5. Apply finish coat

OR

If using ceramic tile or similar material as surface finish:

1. Cut strips for edges
2. Fasten strips to edges
3. Mix tile adhesive
4. Spread adhesive to area to be tiled
5. Lay/Place tiles
6. Apply grout
7. Clean surface of tiles

(b) (iii) Reasons one must be careful about selecting a wood product for use in the bathroom

1. The wood can absorb moisture
2. The wood can rot easily
3. The wood can disintegrate
4. The wood may be difficult to keep clean on its own

### **School-Based Assessment (SBA)**

#### **Rationale**

The SBA component of the Building Technology, Woods option measured the practical skills not tested on the multiple choice and free-response papers (papers 1 and 2).

The assignments set for the SBA were intended to deepen students' knowledge and help them achieve competency in skills required in the Building/Woodwork industry and which are within the competence of secondary school students.

By focusing on processes as well as product, the SBA component was designed to allow students to demonstrate improvement in skills over a period of time and for their teachers' involvement in the process.

## **Requirements**

Each candidate was required to complete a practical and a written assignment during terms four and five of the two-year course (terms one and two of the examination year). The practical assignment was worth 90 marks and the written assignment was worth 30 marks.

## **Practical Assignment**

For the practical assignment, candidates were required to construct a project designed to utilize the skills and knowledge covered in the syllabus. Candidates were given the option to choose one project from a list of three preset requirements provided by CXC. All dimensions for the project were given in millimetres (mm) unless otherwise stated. The project was not to exceed the dimensions of 700 mm long x 400 mm deep. Dimensions omitted were left to students' discretion.

Each student was expected to:

- i) Provide a plan sheet for the project which should have included the following:
  - a) drawings and/or sketches
  - b) steps of procedure
  - c) a bill of materials
  - d) a list of tools and equipment to be used.
- ii) construct a project

The particulars of the project had to be approved by the teacher prior to commencement.

## **Written Assignment**

The written assignment took the form of a report of about 1000–1200 words based on the Common Module: Career Opportunities. Students were required to write on the topic set by CXC for each examination. The topic was based on the following themes in the module:

- i) Job Search
- ii) Career Choice
- iii) Industrial Visits
- iv) Profile of Engineer or Inventor

Students were assessed on accuracy of information, clarity of presentation, the use of technical language and knowledge of career opportunities in the Building Technology industry as outlined in the Common Module of the unit.