4.16.1 Woodwork Paper 1 (444/1)

1. (a) Levels of qualifications.

- Artisan
- Craftsman
- Technician
- Engineer

\[ 2 \times 1 = (2 \text{ marks}) \]

(b) Factors which determine the appearance of grains.

- Methods of cut.
- The location of the cut.
- The condition of wood.
- The arrangement of wood cells.
- Direction of cut.

\[ 4 \times \frac{1}{2} = (2 \text{ marks}) \]

2. Wing divider

![Wing divider diagram]

Sketch Labels, Any \[ 4 \times \frac{1}{2} = 2 \]
\[ = 4 \text{ mks} \]

(4 marks)

3. difference between chamfering and rounding

Chamfering is the shaping of the aris end or edge of a piece of wood at an angle.

Round end

Rounding is the shaping of the aris end or edges of a piece of wood at a given radius.

Sketching \[ 2 \times 1 = 2 \]
Expl. \[ 2 \times 1 = 2 \]
\[ = 4 \text{ mks} \]
4. (a) Texture - is a surface \( \frac{1}{2} \) condition resulting from the size \( \frac{1}{2} \) and distribution \( \frac{1}{2} \) of wood cells.

(b) Figure - pattern \( \frac{1}{2} \) or markings which are formed \( \frac{1}{2} \) on the surface of processed \( \frac{1}{2} \) timber as a result of wood tissue being cut \( \frac{1}{2} \) through.

2 x 2 = (4 marks)

5. (a) Functions of a jointer
- Makes edges straight and square.
- Makes rebates, tongues and chamfers.

2 x 1 = (2 marks)

(b)

<table>
<thead>
<tr>
<th>EXTINGUISHING AGENTS</th>
<th>CLASS OF FIRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water and sand</td>
<td>A</td>
</tr>
<tr>
<td>Chemicals and foam</td>
<td>B</td>
</tr>
</tbody>
</table>

2 x 1 = (2 marks)

6. (a) Four characteristics of laquer
- Crystal clear
- Fast drying
- Produce hazardous fumes during application
- Can be sprayed or brushed
- Do not form layers as thick as most varnishes.

Any 4 x 1/2 = (2 marks)

(b) Classification of pencils

<table>
<thead>
<tr>
<th>Soft</th>
<th>Medium</th>
<th>Hard</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 B</td>
<td>B</td>
<td>4 H</td>
</tr>
<tr>
<td>2 B</td>
<td>HB</td>
<td>2 H</td>
</tr>
</tbody>
</table>

(3 marks)
7. Sectional views of joints

![Sectional Views of Joints]

 Rebated, tongued and grooved joint

 Splayed butt joint

Sketches $2 \times 2 = 4\text{ mks}$

8. Precautions to be observed when using a saw

- No nails/metallic objects in the workpiece.
- No obstacles in front of the cutting line.
- Ensure that the saw is well maintained.
- Make/apply uniform strokes to drive the saw.

Any 3 x 1 = (3 marks)

9. Flat bit and rosehead countersunk

![Flat Bit and Rosehead Countersunk]

Flat bit – Bore holes in all forms of wood quickly and cleanly

Rosehead countersink – Enlarging sides of holes

Sketch, $2 \times 1 = 2$

Function, $2 \times 1 = 2$

$= 4\text{ mks}$
10. **Enlargement**

![Diagram showing an enlarged figure]

Length 80mm (AB') = 1  
Radiation lines = 1  
Enlarged figure = 1  
Original figure = 1  

\[ \frac{4 \text{ mks}}{} \]
12. (a) **Precautions to be observed when using a steel tape measure.**

- Do not pull or push the tape when the locking device is engaged.
- Check the accuracy with a vernier calliper to ensure the hook at the end is not bend.
- Do not extend the tape beyond its limits.
- Do not drop the tape.

3 x 1 = (3 marks)

(b) (i)

(ii) **Step of marking out the shape**

- Establish line \(AB = 60\) mm
- At point A and B construct perpendicular lines.
- At point A and B and along the perpendicular line, mark \(80\) mm - C and D.
- At point A construct \(\angle 30^\circ\) to'cut at E.
- Measure \(30\) mm from point E to establish point F.
- At point F construct an arc \(30\) mm radius to meet at C and D.
- Join points A, C, D and E to produce the desired shape.

7 x 1 = (7 marks)
13.  (a) **Factors to consider when grading timber.**

- **Quality**  
  - when judging the quality the grader considers the type and size of defects on the face (i.e) natural defect, sawing defect, seasoning e.t.c.

- **Condition**  
  - The grader should consider the condition of the surface (i.e) staining, discolouration due to weathering, fungi attack moisture content e.t.c.

- **Strength**  
  - The ability of the timber to withstand shearing stresses, bending stresses and compression.

(b) **Purpose of a primer**

- Prevent previous applied finishes from bleeding into the paint.
- Seals wood pores and stick to surfaces better than paint does.
- As they seal the pores, they make the surface smooth, hence the surface is easier to paint and less absorbent.
- Help to preserve the wood and reduce blistering, peeling and ratting.
- Forms a surface for finishing coat.

Any 4 x 1 (4 marks)

(c) **Blockboard and plywood**

Any 2 x 2 = 4
Labels, Any 2 x 2 x ½ = 2
\[= 6 \text{ mks} \]
14. (a) **Benefits of small business start up**

- Creates employment to the local community.
- Control the rural urban migration
- Generates revenue to the local authority by paying levies.
- Takes services closure to the people.
- Improves the living standards of the local community.
- Makes use of the locally available materials.
- Creates taxable revenue to the Government.

Any 6 x 1 = (6 marks)

(b) **Cutting list**

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
<th>Size (mm)</th>
<th>No. Off</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Top</td>
<td>25 x 150 x 900</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>Bottom</td>
<td>25 x 200 x 900</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>Sides</td>
<td>25 x 200 x 600</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>Partition</td>
<td>25 x 200 x 600</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

Format = 1

= 9 marks

15. (a) **Cross-cutting**

Cross-cutting is the act of cutting wood across the grains using a cross-cut saw

**Ripping**

Ripping is the act of cutting timber along the grains using a rip saw

Sketches $2 \times 2 = 4$

Labels, Any $2 \times 2 \times \frac{1}{2} = 2$

Description $2 \times 1 = 2$

= 8 mks
(b) **Advantages of quarter sawing**
- retains the shape upon drying.
- Produces decorative radial face.
- Produces timber appropriate for joists.

Any 2 x 1 = (2 marks)

**disadvantages**
- Expensive form of conversion.
- Creates a lot of waste.
- Ideal for large logs.

Any 2 x 1 = (2 marks)

**Total** = 4 marks

(c) **Precautions to avoid splitting.**

- Ensure the workpiece is clamped firmly on the bench.
- Select an appropriate chisel.
- Apply light blows to start with.
- Turn the piece and finish from the other side.

Any 3 x 1 = (3 marks)