3.16 WOODWORK (444)

3.16.1 Woodwork Paper 1 (444/1)

SECTION A (40 marks)

Answer all the questions in this section in the spaces provided.

1 (a) Name four sources of business capital. (2 marks)

(b) State four factors to consider when starting a business. (2 marks)

2 (a) State four dangers of inhaling toxic adhesives. (2 marks)

(b) List four characteristics of trees that produce softwood. (4 marks)

3 State three reasons why a mortice gauge may produce inaccurate marks on a piece of wood. (3 marks)

4 Figure 1 shows a piece of timber with defects.

![Figure 1]

(a) Name the defects A and B. (2 marks)

A ........................................................................................................................................

B ........................................................................................................................................

(b) State:-

(i) two causes of defect A;

(ii) one cause of defect B. (3 marks)
5 (a) List six practices that demonstrate the correct use of a cross-cut handsaw while cutting. (3 marks)

(b) **Figure 2** shows a pictorial view of a circular saw.

![Circular Saw Diagram](image)

**Figure 2**

Name the parts labelled A, B, C and D. (2 marks)

A .............................................................................................................

B .............................................................................................................

C .............................................................................................................

D .............................................................................................................

6 State the **two** functions of the knob in a bench plane. (2 marks)

7 State **four** safety precautions to be observed when using a lathe machine. (4 marks)

8 Name **four** characteristics of polyvinyl acetate (PVA) glue. (4 marks)

9 Give **two** disadvantages of oil-based paint. (2 marks)

10 **Figure 3** shows a mitred bridle joint.

![Mitre Joint Diagram](image)

**Figure 3**

Sketch an exploded pictorial view of the joint. (5 marks)
SECTION B (60 marks)

Answer question 11 on the A4 paper provided and any other three questions from this section in the spaces provided after question 15. Candidates are advised not to spend more than 25 minutes on question 11.

11 Figure 4 shows a shaped block drawn in isometric projection.

![Diagram of a shaped block](image_url)

Figure 4

Draw, full size, the following views in first angle projection:

(a) a sectional front elevation of the cutting plane x-x;

(b) a plan;

(c) indicate six dimensions. (15 marks)
12 (a) Outline the procedure of making a groove in a workpiece using a plough plane. 

(7 marks)

(b) **Figure 5** shows a curved shallow sugar dish.

![Figure 5](image)

Outline the procedure of carving the dish from a block of wood to the required shape. 

(8 marks)

13 (a) Using labelled sketches, show the difference between an auger bit and a twist drill bit. 

(6 marks)

(b) Describe the oven dry method of determining the percentage moisture content of a piece of timber. 

(5 marks)

(c) Differentiate between film forming finishes and penetrating finishes as applied in wood work and give **two** examples of each. 

(4 marks)

14 (a) Outline the procedure of marking out a piece of wood to size using a marking gauge. 

(7 marks)
(b) **Figure 6** shows a coffee stool.

![Figure 6](image)

Calculate the cost of the stool from the given information. (8 marks)

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>DESCRIPTION</th>
<th>SIZE</th>
<th>COST (KSH)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Veneared block board</td>
<td>1200 x 2400</td>
<td>3,600</td>
</tr>
<tr>
<td>2.</td>
<td>Wood lipping</td>
<td>25 mm wide</td>
<td>30 per 300 mm</td>
</tr>
<tr>
<td>3.</td>
<td>Timber</td>
<td>100 x 100</td>
<td>40 per 300 mm</td>
</tr>
<tr>
<td>4.</td>
<td>Wood glue</td>
<td>$\frac{1}{2}$ kg</td>
<td>60</td>
</tr>
<tr>
<td>5.</td>
<td>Wood varnish</td>
<td>$\frac{1}{2}$ kg</td>
<td>180</td>
</tr>
</tbody>
</table>

* Allow 30% for labor and overheads.

15 (a) With the aid of a labelled sketch, show the pocket screw method of fixing table top to rails. (5 marks)
(b) **Figure 7** shows a paint brush.

![Figure 7](image)

(i) Name the parts marked P, Q, R and S.

(ii) State the function of each part. 

(c) Other than food, state and explain **two** favourable conditions for fungal growth in timber.