BOARD OF STUDIES
NEW SOUTH WALES

STUDENT NUMBER

CENTRE NUMBER

HIGHER SCHOOL CERTIFICATE EXAMINATION

1998

INDUSTRIAL TECHNOLOGY

2 UNIT

SECTION III—WOOD

Total time allowed for Sections I, II and III—One hour and a half
(Plus 5 minutes reading time)

DIRECTIONS TO CANDIDATES

- Write your Student Number and Centre Number at the top right-hand corner of this page.
- Where appropriate, show working for solutions neatly and clearly.
- You may use Board-approved drawing instruments and calculators.

Section III—Wood (15 marks)

- Attempt ALL questions.
- Answer the questions in the spaces provided in this paper.

MARKER'S USE ONLY

Question		
13		
14		
15		

QUESTION 13. (5 marks)

MARKER'S USE ONLY

Figure 1 shows a pictorial sketch of an entertainment trolley constructed from teak.

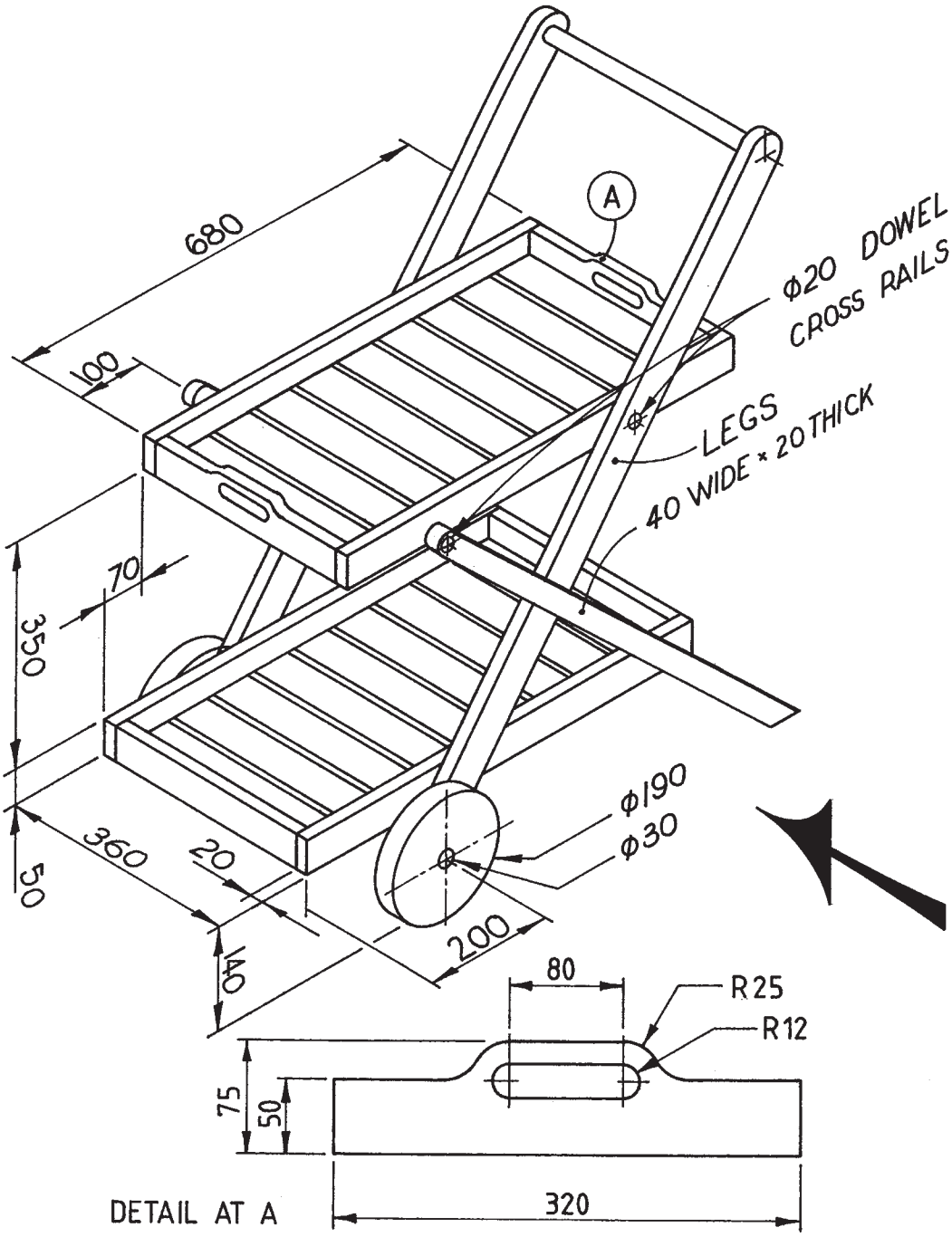
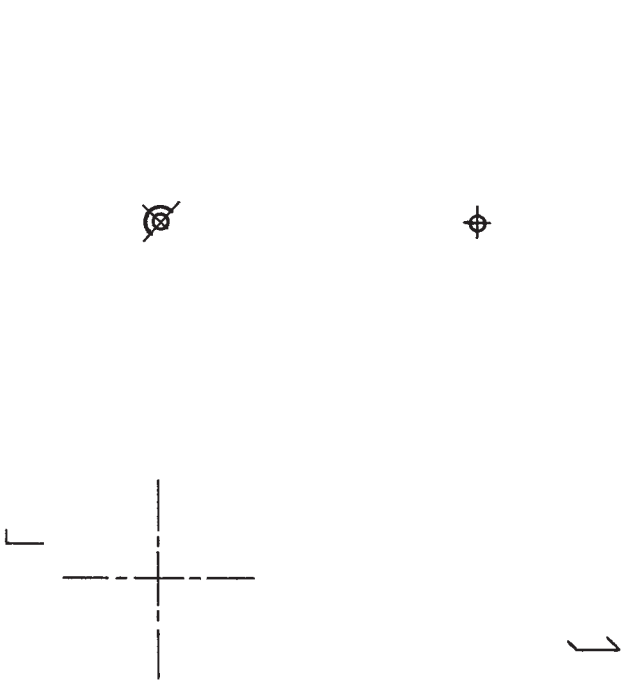


FIG. 1. ENTERTAINMENT TROLLEY

QUESTION 13. (Continued)

MARKER'S USE ONLY

Complete the front view below, in the direction of the arrow, of the entertainment trolley shown in Figure 1. The centre lines of the wheel, supporting axle and cross rails are given. The view is to be drawn using a scale of 1 : 10. Hidden detail is not required.



FRONT VIEW

Question 13 continues on page 4

QUESTION 13. (Continued)

MARKER'S USE ONLY

(b) A pictorial sketch of a bottle holder as an accessory for the entertainment trolley is shown in Figure 2.

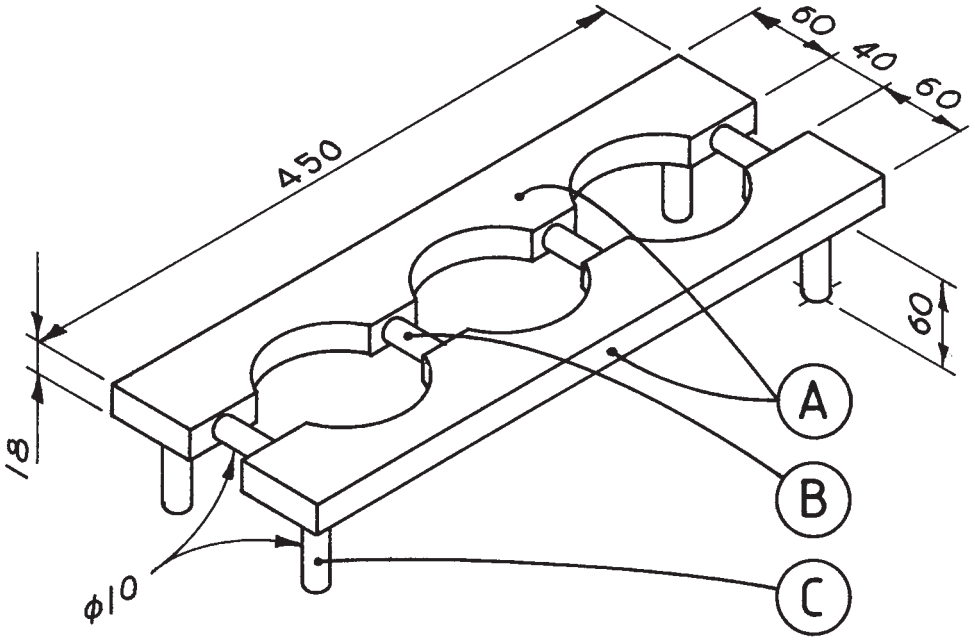


FIG. 2. BOTTLE HOLDER

(i) Complete the table below, showing the cutting list for the bottle holder. All dowels are recessed 10 mm into part A.

Part	*No. required*	*L*	*W*	*Th*
A				
B				
C				

(ii) Calculate the length of timber and dowel required to make 100 bottle holders (no allowance is to be made for waste).

Timber ..... metres

Dowel ..... metres

QUESTION 13. (Continued)

MARKER'S USE ONLY

(c) Outline the steps you would take in the school workshop to mark out and drill the dowel holes in the sides of part A of the bottle holder to ensure that both pieces line up when they are glued (use diagrams where necessary).

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

(d) The wheels of the trolley are supported on a ∅30 mm hardwood axle. Use a diagram to illustrate ONE method of attaching the wheels to the axle without them rubbing on the cross rails.

QUESTION 14. (5 marks)

MARKER'S USE ONLY

(a) A wheel from the entertainment trolley shown on page 2 is given in Figure 3 below.

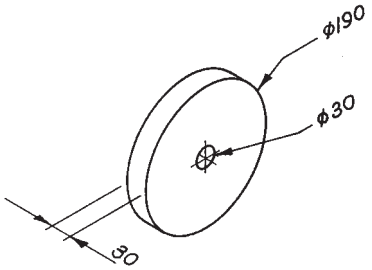


FIG. 3. WHEEL

You are to make the wheel on a lathe in the school workshop from a piece of timber 200 mm square × 30 mm thick.

(i) How would you prepare the blank prior to turning?

.....

.....

.....

(ii) What method could be used to hold the blank for turning?

Method: .....

Sketch and describe this method.

.....

.....

.....

.....

.....

(iii) List THREE safety checks that should be made before performing the turning operation.

1. .....

2. .....

3. .....

QUESTION 14. (Continued)

MARKER'S USE ONLY

(b) A pictorial sketch of the top tray used in the entertainment trolley shown on page 2 is given below (Figure 4).

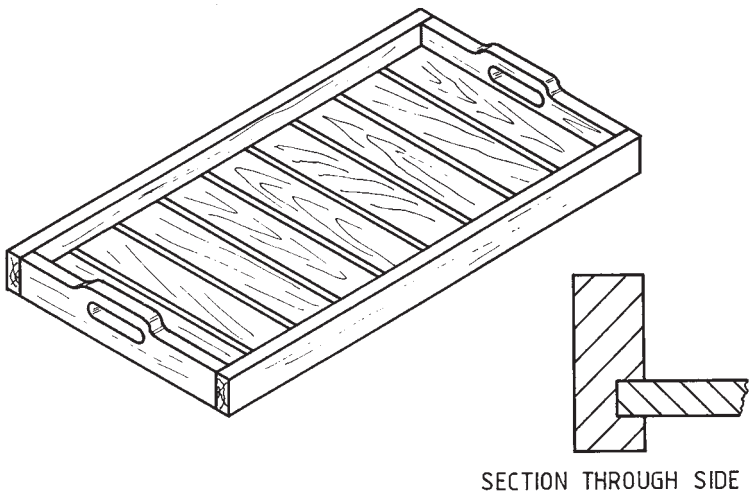


FIG. 4. TOP TRAY

The slats for the base of the tray are housed into the side rails.

(i) List TWO machines or tools that could be used to construct the groove for the slats:

1. in the school workshop;

(I) .....

(II) .....

2. in industry. (Do NOT repeat the answer above.)

(I) .....

(II) .....

(ii) The slats need to be cut to length accurately. Name a machine used to perform this operation.

.....

(iii) Describe a method used with the machine in part (ii) that you would use to ensure that all slats are cut to the same length.

.....

.....

.....

Question 14 continues on page 8

QUESTION 14. (Continued)

MARKER'S USE ONLY

(c) A small cabinet, shown in Figure 5 below, is to be manufactured using pine-veneered particle board.

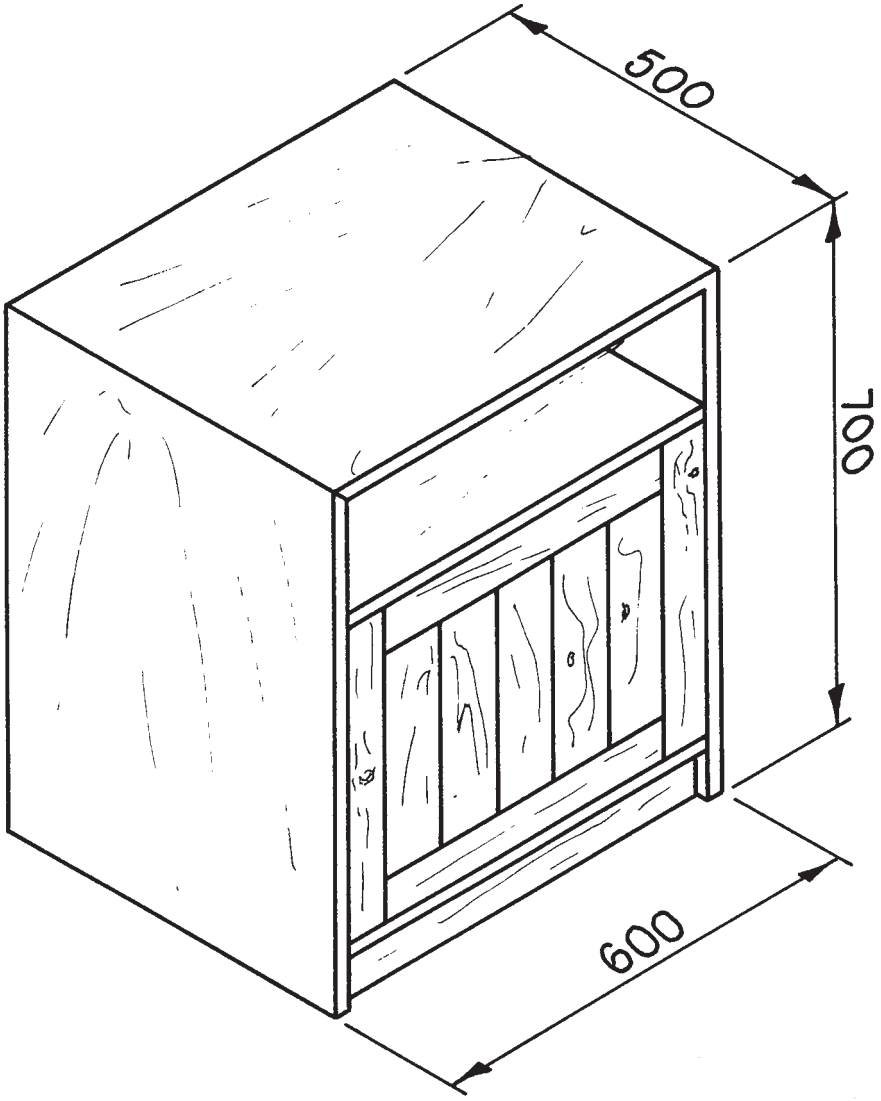


FIG. 5. SMALL CABINET

(i) Name a suitable edge treatment and describe how it is applied to the cabinet.

Name .....

Description .....

.....

QUESTION 14. (Continued)

MARKER'S USE ONLY

(ii) The door of the cabinet is a framed panel door. Name and sketch THREE different joints that could be used for the corners of the door frame.

1. Name .....

   Sketch

2. Name .....

   Sketch

3. Name .....

   Sketch

(iii) When gluing the door, what methods would you use to:

1. check that the door is 'square'?

   .....

   .....

2. check that the door is 'flat'?

   .....

   .....

(iv) The door is to be fitted to the cabinet using hinges. Name a suitable hinge and describe how the hinge would be fitted to the cabinet.

Name of hinge .....

Description of fitting .....

.....

QUESTION 15. (5 marks)

MARKER'S USE ONLY

A pictorial view of an outdoor table is shown in Figure 6 below.

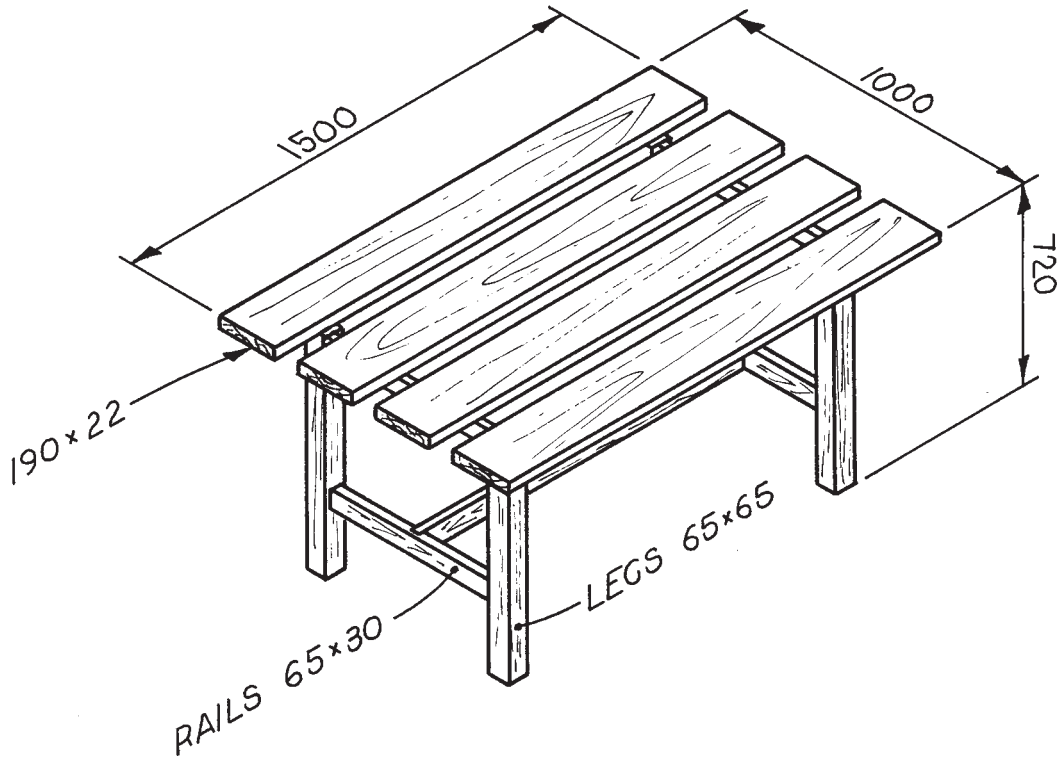


FIG. 6. OUTDOOR TABLE

(Overall size of table: 1500 × 1000 × 720 mm)

(a) Name a suitable timber that could be used for the table.

.....

(b) State TWO different properties for the timber listed in part (a) that make it suitable for outdoor use.

(i) .....

(ii) .....

QUESTION 15. (Continued)

MARKER'S USE ONLY

(c) A manufacturer wishes to design a suitable bench seat that is to be used with the outdoor table shown in Figure 6.

In the space below, draw a freehand pictorial sketch of a suitable bench seat.

Indicate on your sketch:

- the overall sizes of the bench seat;
- joints and fixtures used;
- THREE safety features that you have incorporated in your design.

Question 15 continues on page 12

QUESTION 15. (Continued)

MARKER'S USE ONLY

(d) Timber for the bench seat is to be purchased from the local timber yard. Name TWO timber defects that could affect the construction of the product.

Defect	*Effect on product*
1.	....
2.	....

End of paper

© **Board of Studies NSW 1998**