

JUNIOR LYCEUM ANNUAL EXAMINATIONS 2006

Educational Assessment Unit - Education Division

FORM V

TECHNICAL DESIGN

Time: 2 hours

Instructions

Write your name and class on ALL sheets.

Attempt ALL questions

Questions should be attempted on the pre-printed answer sheets provided

All answers are to be drawn accurately, with instruments, unless otherwise stated.

All construction lines **MUST** be left on each solution to show the method employed.

Drawing aids may be used.

Information

All dimensions are in millimetres

Estimate any dimensions not given.

Marks will be awarded for accuracy, clarity and appropriateness of construction

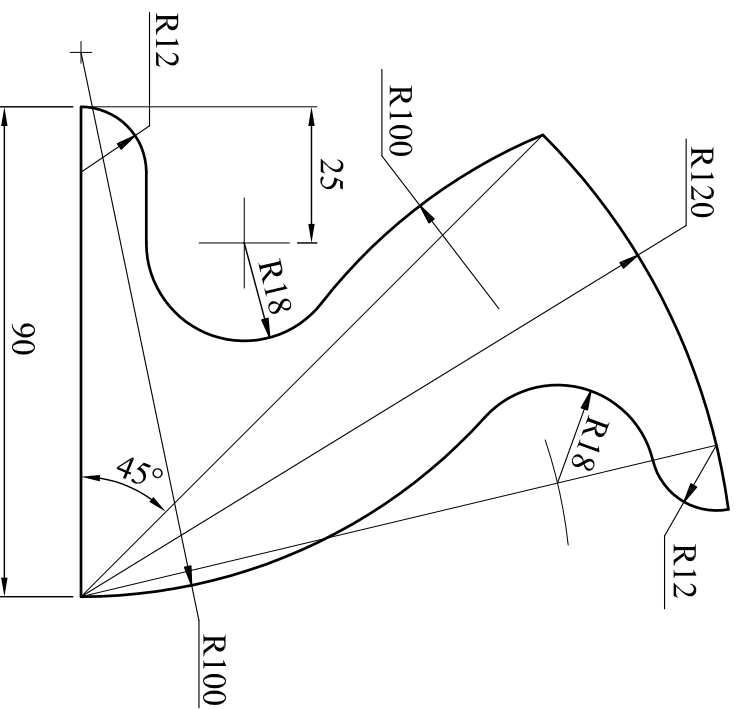
NAME: _____

CLASS: _____

Question No.	1	2	3	4	5	6
Total mark	16	12	18	16	16	22
Marks awarded						

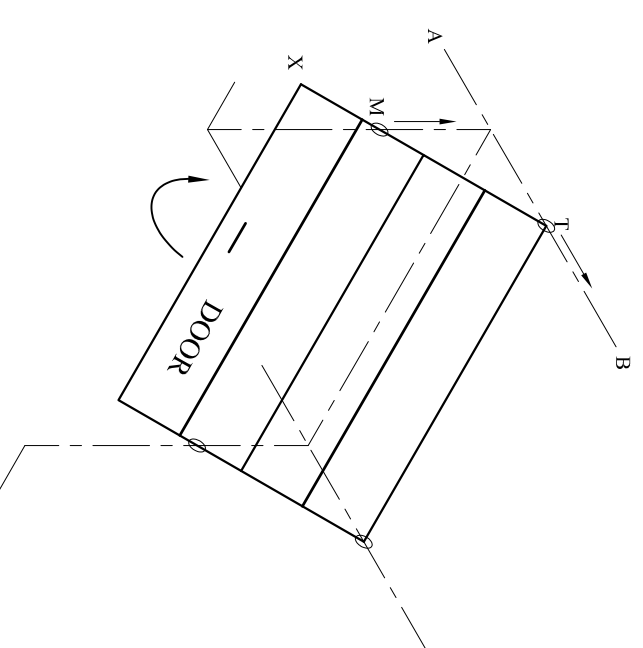
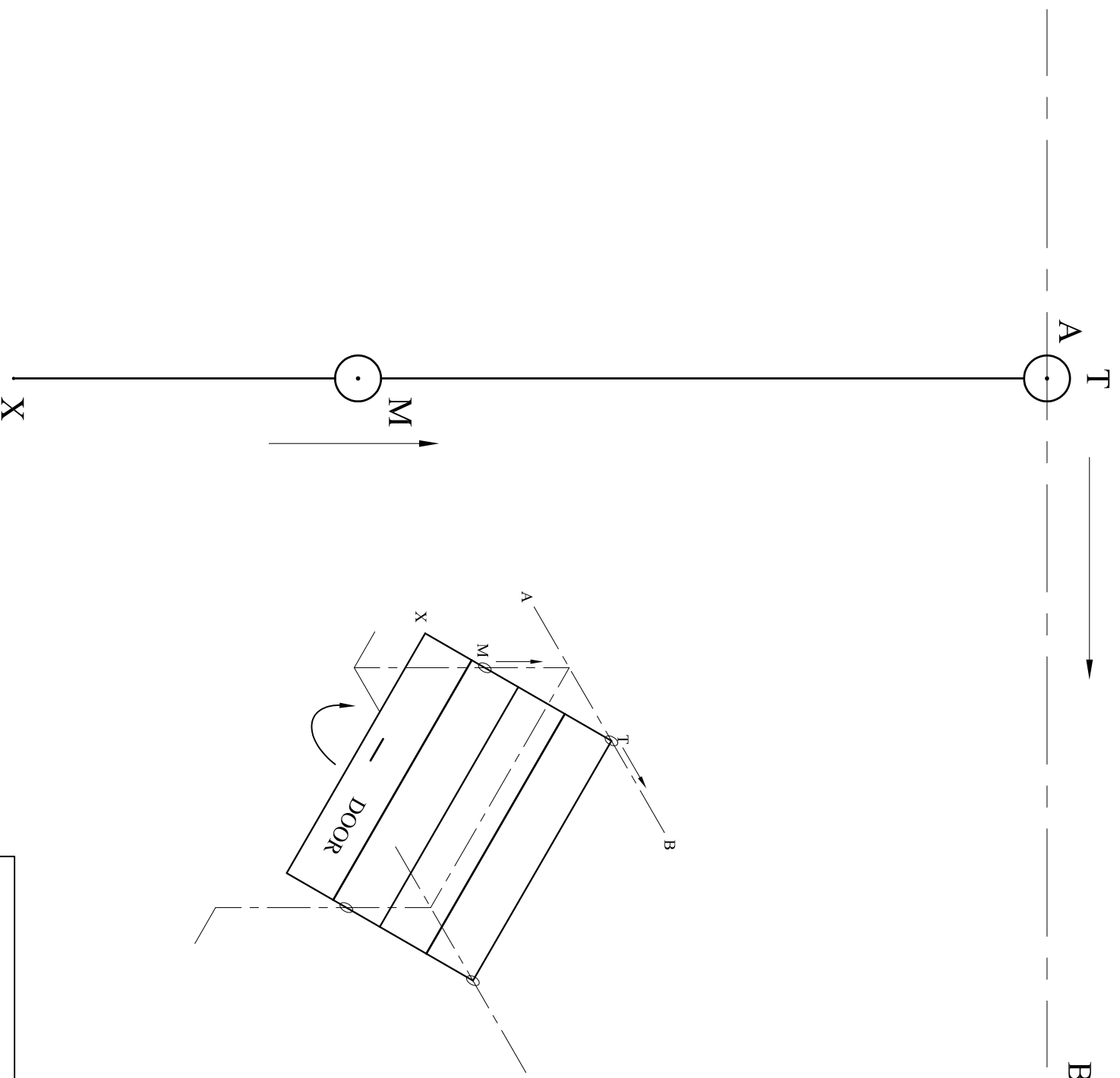
1. The figure below shows the profile of a handle for a plane. Construct the profile, full size, using geometrical methods to determine the centres of the arcs. Indicate the position of the five tangency points by drawing short lines across the outline. Leave all construction lines.

16 marks



2. The drawing shows the line diagram of the mechanism of an "Up and over" Garage Door **T - X**. **M** is a pivot point fixed on the door, and is free to slide upwards as indicated. Line **A - B** gives the final resting position of the open door. Using the line diagram, construct the **locus of point 'X'** as **T** moves along **A - B** towards **B** while **M** moves vertically towards **T**.

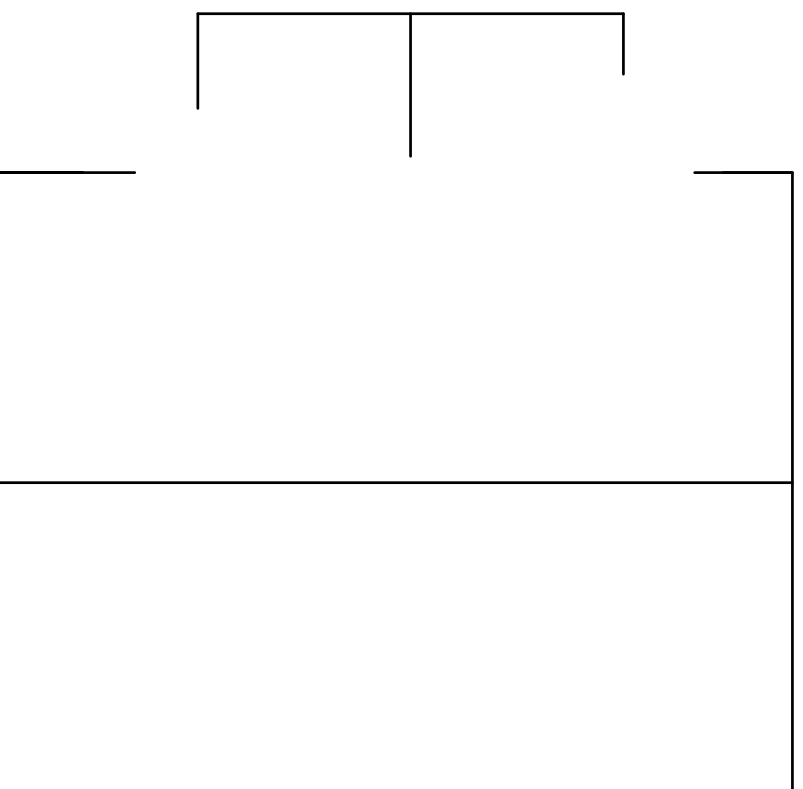
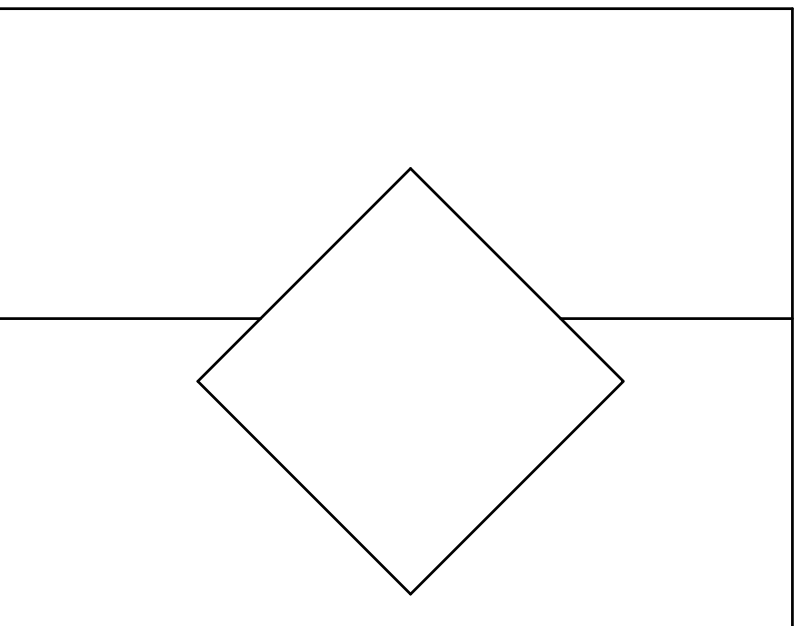
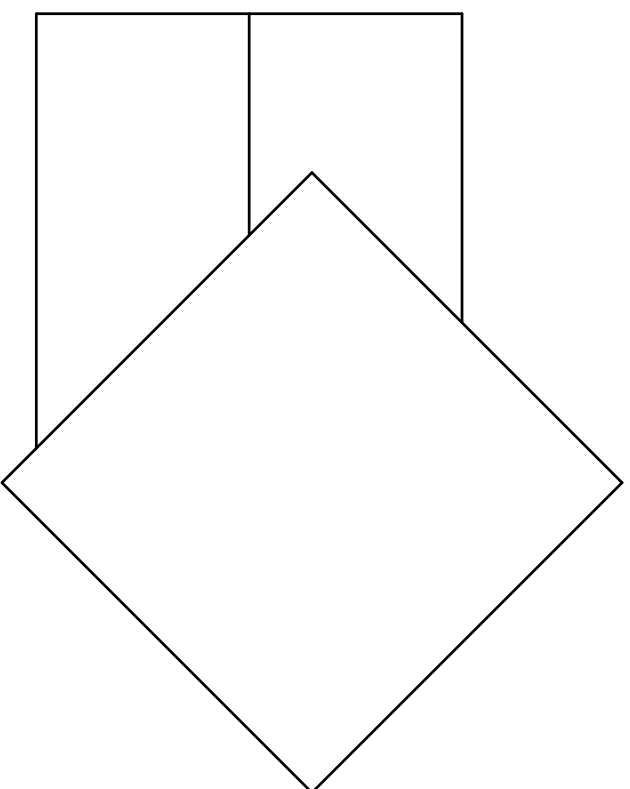
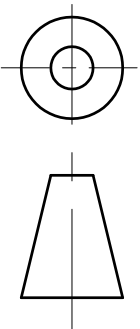
12 marks



3. The figure shows an end elevation, a plan and an incomplete front elevation of two intersecting square prisms.

- (a) Complete the given elevation showing clearly how the lines of intersection are obtained.
- (b) Show all hidden detail.

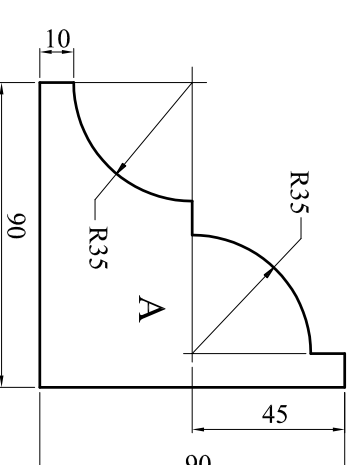
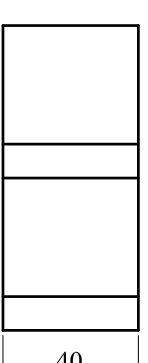
18 marks



4. The figure below shows two views of a solid component in third angle projection.

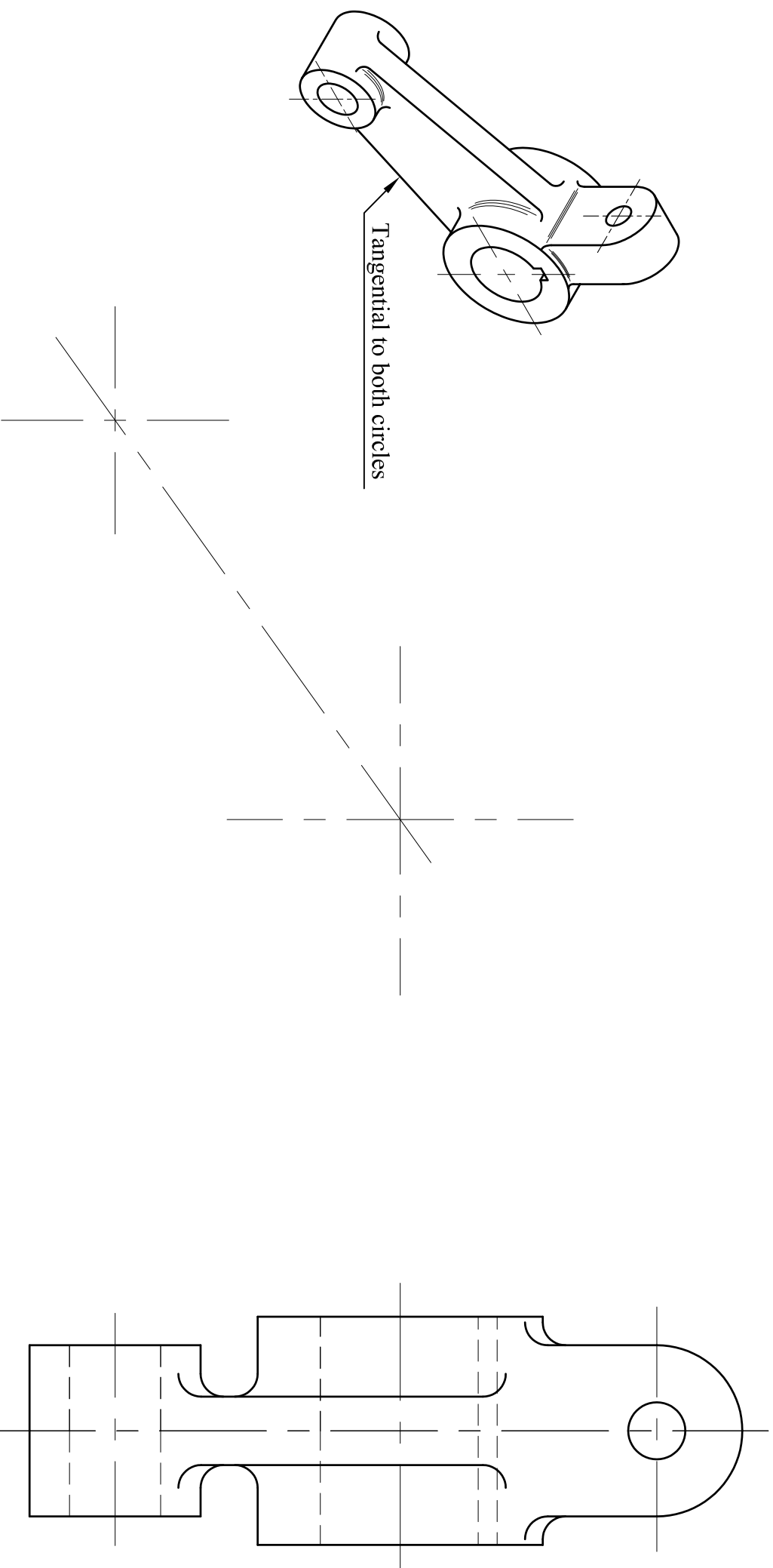
Draw, to a scale of 1 : 1 a cabinet oblique of the object, positioning Face 'A' in the foreground.

18 marks



5. The figure below shows in first angle projection two views of a **LEVER**.
The Lever is composed of two unequal cylinders connected by a **web**.
- On the given centre lines, project a **sectional front elevation** on plane A - A.
 - Draw the appropriate symbol to indicate the projection angle used.

16 marks



NOTE: ALL FILLET RADII 4mm

6. The front elevation and plan views of a **Display Base** are given in first angle projection. Project an auxiliary elevation as seen when looking in the direction of arrow 'A'. Do not include any hidden detail to your drawing. All construction lines must be clearly shown. 22 marks

