

# JUNIOR LYCEUM ANNUAL EXAMINATIONS 2004

Educational Assessment Unit – Education Division

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**FORM 3 (1<sup>st</sup> year)**

**TECHNICAL DESIGN**

**TIME: 2 hours**

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**NAME:** \_\_\_\_\_

**CLASS:** \_\_\_\_\_

## Instructions

- Write your name and class on all sheets.
- Attempt **ALL** questions.
- 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.
- **You are required to use one side of your paper for question number 1 only.**

## Information

- All dimensions are in millimetres.
- Estimate any dimension not given.
- Marks will be awarded for accuracy, clarity and appropriateness of construction.

Question	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Max.mark	<b>45</b>	<b>12</b>	<b>15</b>	<b>10</b>	<b>18</b>
Mark					

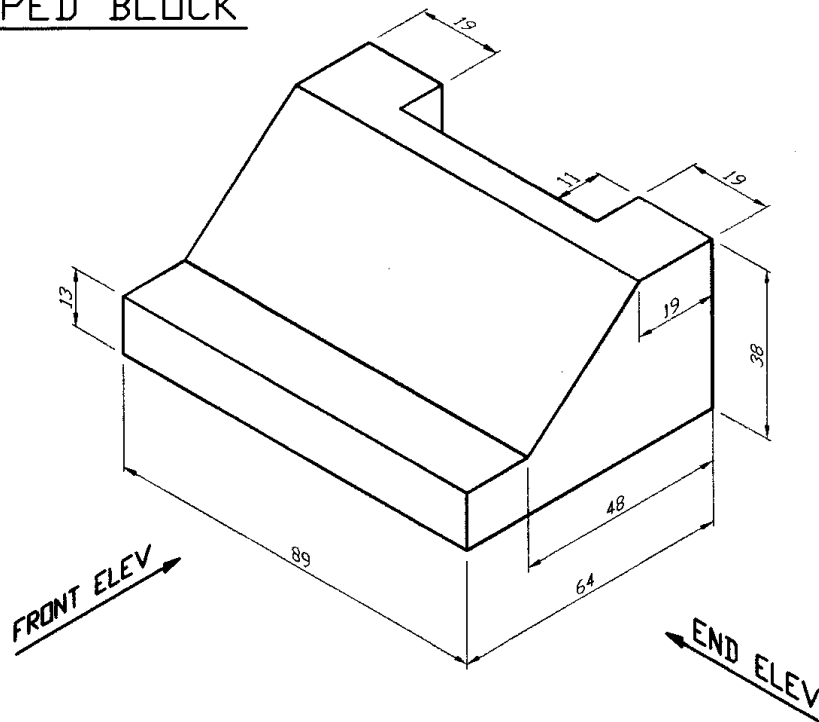
1. The figure below shows a pictorial view of a **SHAPED BLOCK**.  
To the dimensions given and using **First Angle Projection**, draw the following views.

- |     |  |          |
|-----|--|----------|
| (a) | a front elevation                            | 12 marks |
| (b) | an end elevation                             | 12 marks |
| (c) | a complete plan                              | 16 marks |
| (d) | the Symbol for projection used and the Scale | 5 marks  |

**Note:** Insert all hidden details

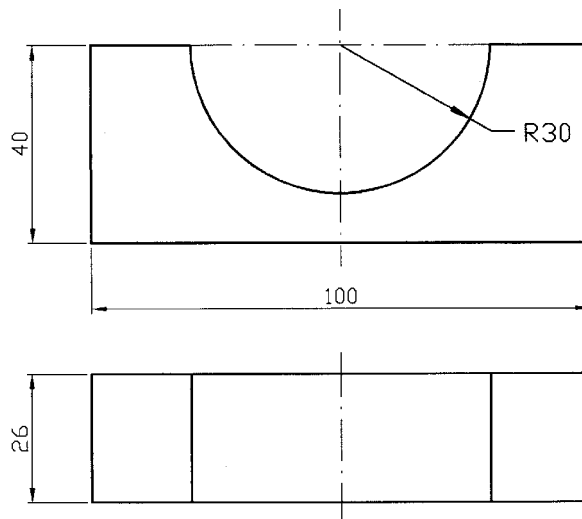
**Total 45 marks**

SHAPED BLOCK



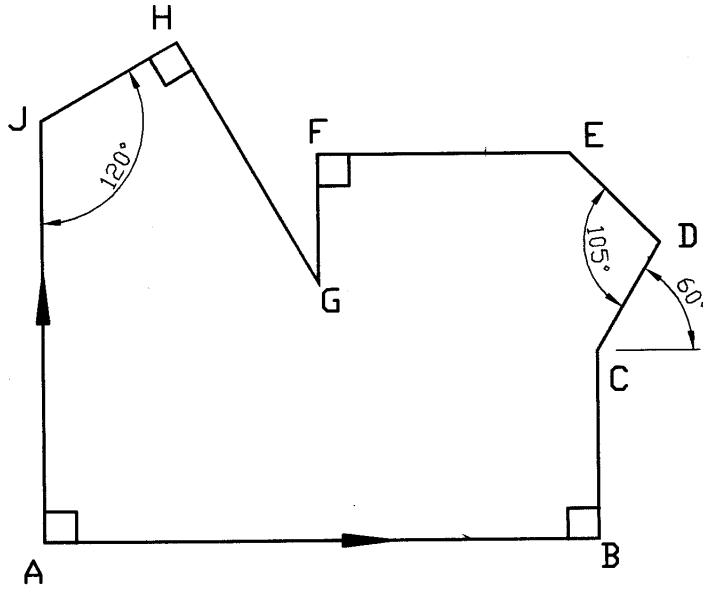
2. The figure below shows a front elevation and a plan view in first angle projection of a part of a BEARING BLOCK.  
Draw this component in ISOMETRIC PROJECTION

**12 marks**



3. Draw to a scale of 1:1 the figure shown below and by means of a proportional scale construct a similar polygon with its sides reduced in length by the ratio of 3 : 5.

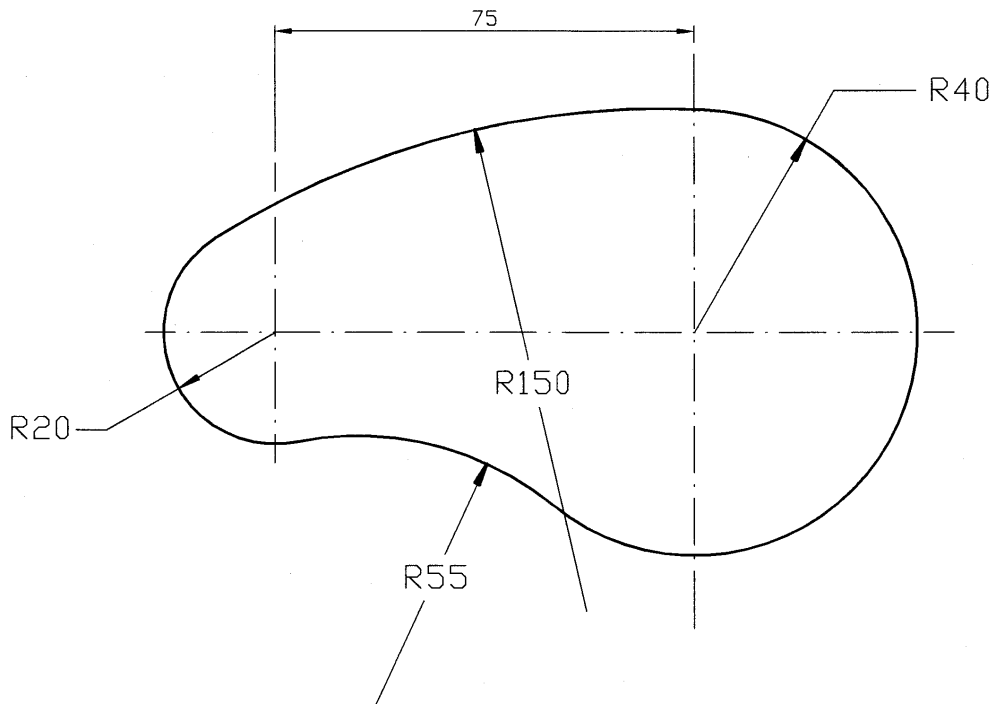
**15 marks**



$AB = 88$     $CD = 20$     $AJ = 67$   
 $BC = 30$     $DE = 20$     $JH = 25$   
 $EF = 40$

4. The figure below shows a part of a machine. Redraw the given component to a scale of 1 : 1 using geometrical methods to determine the centres of arcs. Indicate the exact points of tangency between blending arcs by drawing short lines across the profile at these points.

**10 marks**



5. The figure below shows a solid cut from hexagonal prism for which a model is required to be made from cardboard.
- To the dimensions given copy the given views.
  - Draw a development of the sides of the prism assuming the joint line at corner A.

**18 marks**

