

**JUNIOR LYCEUM and SECONDARY SCHOOL
ANNUAL EXAMINATIONS 2004**

Educational Assessment Unit – Education Division

FORM 3 (3rd year) TECHNICAL DESIGN TIME: 2 hours

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

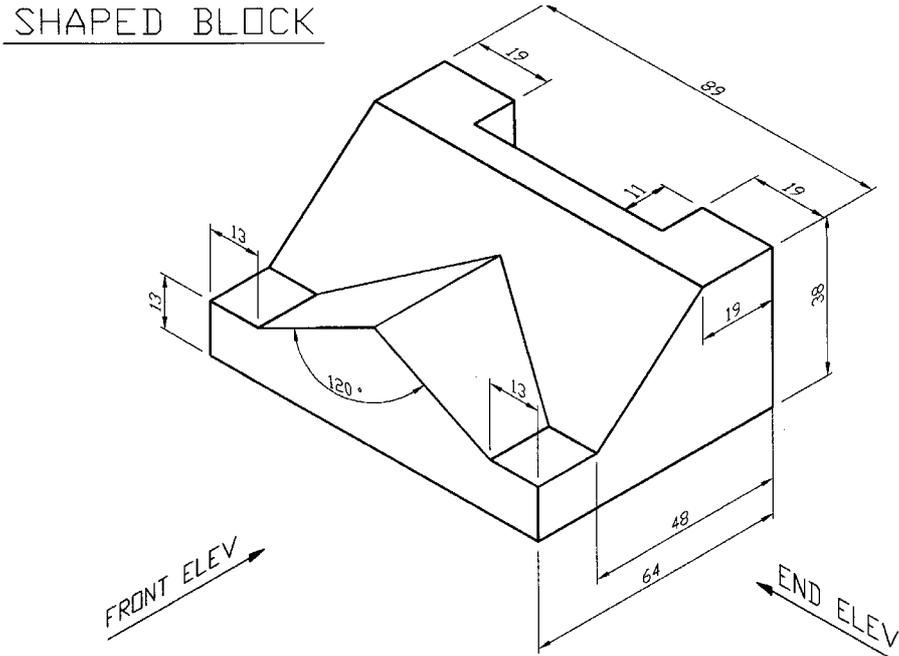
- All dimensions are in millimetres.
- Estimate any dimension not given.
- Marks will be awarded for accuracy, clarity and appropriateness of construction.

Question	1	2	3	4	5
Max. mark	45	12	15	10	18
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 Scale | 5 marks |

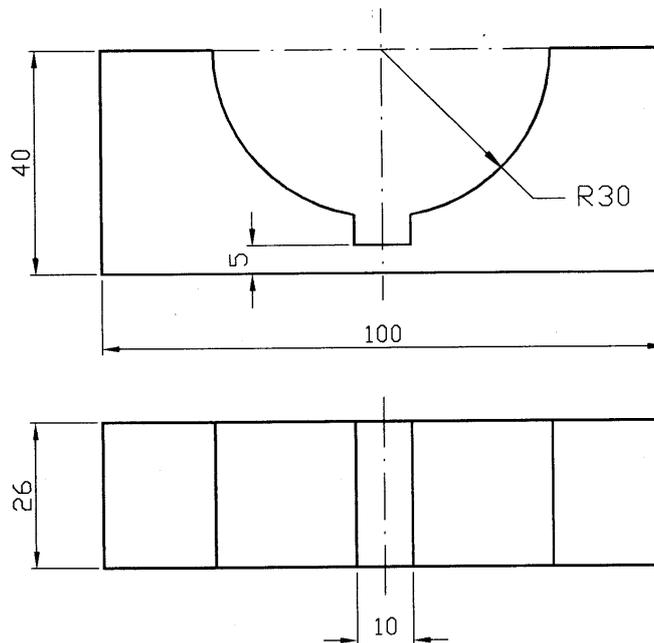
Note: Insert all hidden details

Total 45 marks



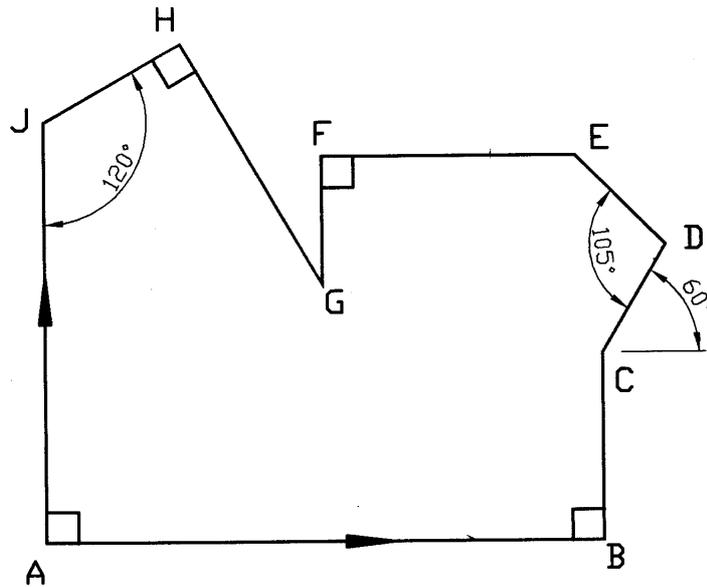
2. The figure below shows a front elevation and a plan view in first angle projection of a part of a **BEARING BLOCK**.
 Draw this component in **ISOMETRIC PROJECTION**

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.

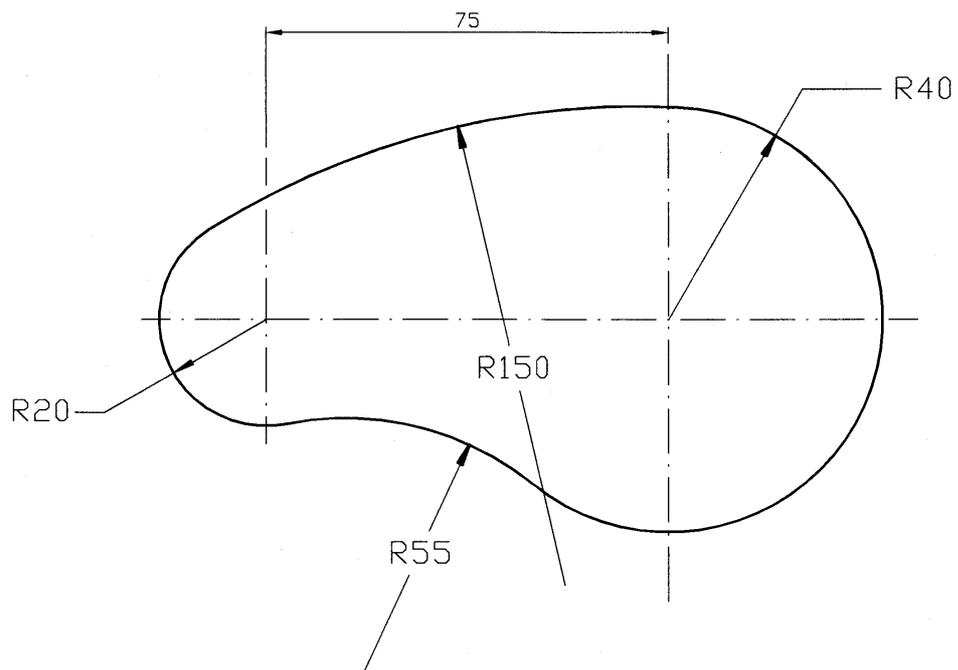
15 marks



$$\begin{aligned} AB &= 88 & CD &= 20 & AJ &= 67 \\ BC &= 30 & DE &= 20 & JH &= 25 \\ EF &= 40 \end{aligned}$$

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'.
 - Draw the true shape of the top surface of the prism.

18 marks

