

JUNIOR CERTIFICATE EXAMINATION, 2002

TECHNIQUES AND DESIGN

METALWORK

HIGHER LEVEL - PRACTICAL 150 marks

TUESDAY, 14TH MAY, 2002

9.30 a.m. - 12.30 p.m. or 2.00 p.m. - 5.00 p.m.

INSTRUCTIONS TO CANDIDATES

- (a) The Candidate's Examination Number must be stamped or engraved by the **teacher** in the position shown on the drawing. If the test piece is not assembled, the Examination Number must be indicated on each piece of the test.
- (b) Candidates are not permitted to communicate with or assist one another.
- (c) The mild steel pieces must be very lightly coated with clean lubricating oil.

From the materials supplied, make the model shown on the drawings to the shape and dimensions specified.

Part 1: MATERIAL: Mild Steel or Aluminium, mark out, drill, tap and shape.

Part 2: MATERIAL: Mild Steel or Aluminium, mark out, drill and shape.

Part 3: MATERIAL: Mild Steel or Aluminium, mark out, drill and shape.

Part 4: MATERIAL: Mild Steel, Aluminium or Acrylic, mark out, drill and shape.

Part 5: MATERIAL: Aluminium or Nylon, turn to shape, drill and tap.

- NOTE:**
- 1. Part 5 has been made prior to the examination day.
 - 2. Assemble the parts using the set screws and nuts supplied.
 - 3. Rust preventative must not be applied to the Acrylic or other non-ferrous parts.

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TECHNIQUES AND DESIGN - METALWORK
PRACTICAL EXAMINATION - HIGHER LEVEL

MATERIAL LIST:

- One piece 60 x 3 x 115 Mild Steel or Aluminium to make Part 1.
- One piece 30 x 3 x 60 Mild Steel or Aluminium to make Part 2.
- One piece 30 x 3 x 30 Mild Steel or Aluminium to make Part 3.
- One piece 40 x 3 x 40 Mild Steel, Aluminium or Acrylic to make Part 4.
- One piece Ø30 Aluminium or Nylon to make Part 5.
- 2 M5 x 10 round head set screws.
- 1 M5 x 6 round head set screw.
- 1 M5 x 10 CSK set screw.
- 2 M5 hexagonal nuts.

Note:

All dimensions are in millimetres. Where metric stock is not available, the equivalent imperial size should be used.

The finished component must be prepared by the candidate and safely stored until examination day.

If mild steel is used it should be very lightly coated with clean lubricating oil.

EQUIPMENT LIST:

The usual bench tools and marking out instruments including a bevel protractor. A small bevel gauge will be required for each three candidates. The following are also required.

Drills: 10.5 mm and 5.5 mm, with spares
Tapping size drill for M5 with spares.
Countersinking bit.

Taps: One set of M5 taper and plug taps for each five candidates, with suitable tap wrenches and lubricant.

Files: 250 mm hand rough.
250 mm hand smooth.
150 mm hand rough.
150 mm hand smooth.
150 mm warding rough.

Emery Cloth: One small piece of medium grade per candidate.

GENERAL TOOLS:

Pair of fibre vice clamps, screwdriver to suit set screws supplied, spanner to suit nut supplied, junior hacksaw with blades. Figure and letter punches or an engraver for the candidate's examination number.

NOTE: It is important that all drilling machines are fully operational and complete with chucks and machine vices as well as clamps, machine guards and protective goggles or safety visors.
