DAY GROUP CERTIFICATE EXAMINATIONS, 1968

MECHANICAL DRAWING

WEDNESDAY, 19th JUNE – 10 a.m. to 12.30 p.m.

INSTRUCTIONS

(a) Not more than <u>four</u> questions may be attempted; <u>two</u> of these must be selected from Section I and <u>two</u> selected from Section II.
(b) The number of the question must be distinctly marked by the side of each answer.
(c) Work on one side of the paper only.
(d) All questions carry equal marks; a maximum of 5 marks will be awarded for accuracy and neatness of arrangement in respect of each question.
(e) Examination number must be distinctly marked on each sheet of paper used.

SECTION I

1. (a) The drawing in Fig. 1(a) represents a Woodwork Joint. Make a full-size dimensioned drawing of the assembled joint showing:-

    (a) An elevation looking in direction of the arrow A.
    (b) An end elevation looking in the direction of the Arrow B.
    (c) A plan view projected from (a).

All dimensions required to make this joint should be shown on the finished drawing. Print title of each view neatly.

   (b) The drawing in Fig. 1(b) represents a Metalwork Project. On the $\frac{1}{8}$ in. squared paper supplied, draw free-hand, in good proportion and correct the following:-

        (a) An elevation
        (b) An end elevation
        (c) A plan view projected from (a)

Show by means of properly drawn dimensioned lines the number of dimensions you would require to make this project. (It is not necessary to give actual measurements).

   (c) The drawing in Fig. 1(c) represents a solid shaped to the given dimensions. Make a full-size drawing of this solid, showing:-

        (a) An elevation looking in the direction of the arrow A.
        (b) An end elevation looking in the direction of the arrow B.
        (c) A plan view projected from (a).

All dimensions required for the shaping of the solid should be shown on the completed drawing.
        Print title of each view neatly.

2. The elevation of a Hexagonal-based Pyramid resting on its apex, one edge inclined at 30° to H.P. and resting centrally on a cylinder 4 inches long is shown in Fig. 2. The axis of the cylinder is parallel to the H.P. and at right angles to the V.P. The axes of the pyramid is parallel to the V.P. Draw the given view and then project the plan. <u>Index all points</u> in elevation and plan.

3. The plan and elevation of a solid are shown in Fig. 3. It is cut by an inclined plane as shown in elevation.
        Draw full-size:-

    (a) The given plan and elevation
    (b) An end elevation looking along the arrow A
    (c) A True Shape of the sectioned surface.

<u>Index all points</u> on plan, elevations and True Shape.

4. Draw the elevation and plan of the scoop shown in Fig. 4, and determine the correct developed shape of the material required to make the scoop.

(Answer any <u>two</u> questions from this section)

5. Construct a scale of $1\frac{1}{2}$ ins. representing 1 ft. to read up to 5 ft. and show inches. Using this scale construct the semi-elleptical arch shown in Fig. 5.

6. The drawing shown in Fig. 6 represents a wrought iron scroll. Reproduce the given drawing full-size, showing all geometrical constructions, points of contact, etc., in light lines.

7. A design based on circles inscribed in a trapezium is given in Fig. 7. Draw the design to the dimensions given. (<u>All</u> construction details to be shown lightly).

8. The equilateral triangle shown in Fig. 8 represents a piece of material. You are required to cut from it the largest possible square, one side of the square being on the line AC. Indicate neatly to the nearest $\frac{1}{16}$ in. the length of the side of the square.

(No marks given for guesswork. Radial projection may be used as an alternative to the usual method.)