WORKFORCE DEVELOPMENT AUTHORITY
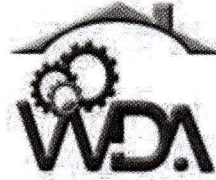
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ADVANCED LEVEL NATIONAL EXAMINATIONS, 2015, TECHNICAL AND PROFESSIONAL TRADES

EXAM TITLE: Technical Drawing and DCG

OPTION: Electricity (ELC)

DURATION: 3hours

INSTRUCTIONS:

The paper is composed of **three (3) Sections**:

|		
Section I: Fourteen **(14)** questions, all **Compulsory**.		**55marks**
Section II: Five (5) questions, **Choose Three (3) only**.		**30marks**
Section III: Three (3) questions, **Choose only One (1)**.		**15marks**

Every candidate is required to strictly obey the above instructions. Punishment measures will be applied to anyone who ignores these instructions.

Section I. Fourteen (14) Compulsory questions.   **55marks**

01. A house plan has been drawn to a scale of 1:100. If a measurement is 4.5 metres in real life, how long would it be on the house plan?   **2marks**

02. A drawing of a step block is shown with dimensions marked. Which distance is correctly dimensioned?   **2marks**
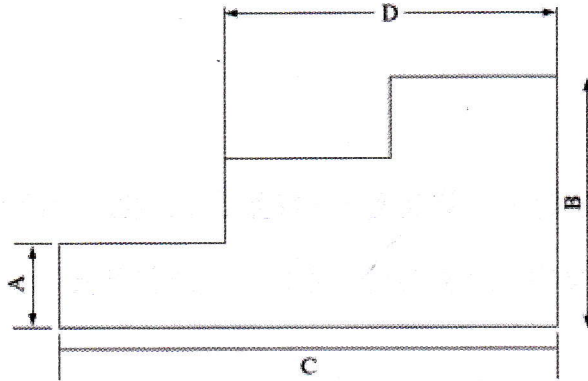
03. Using a ruler, draw a square with 40mm sides.   **2marks**

04. Using a compass, draw a circle with the radius of 25mm.   **2marks**

05. Draw the basic lines used in technical drawing and indicate the names according to the application.   **4marks**

06. Define and classify technical drawing.   **5marks**

07. By using symbols differentiate the angles of projection and indicate where are used.   **6marks**

08. Draw angle OMN of 65º and make bisect of that angle.   **4marks**

09. Inscribe the hexagon in the circle of 30mm of radius.   **4marks**

10. By using an example explain what is Orthographic Projections.   **5marks**

11. What are the sizes of drawing papers?   **4marks**

12. Draw circle at which the radius touch to two converging lines AB and AC   **4marks**

13. Complete detailed orthographic views of the drawing below: **6marks**
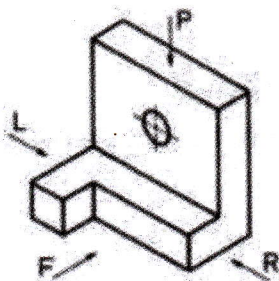
14. Construct an equilateral triangle with sides of 60 mm long.   **5marks**
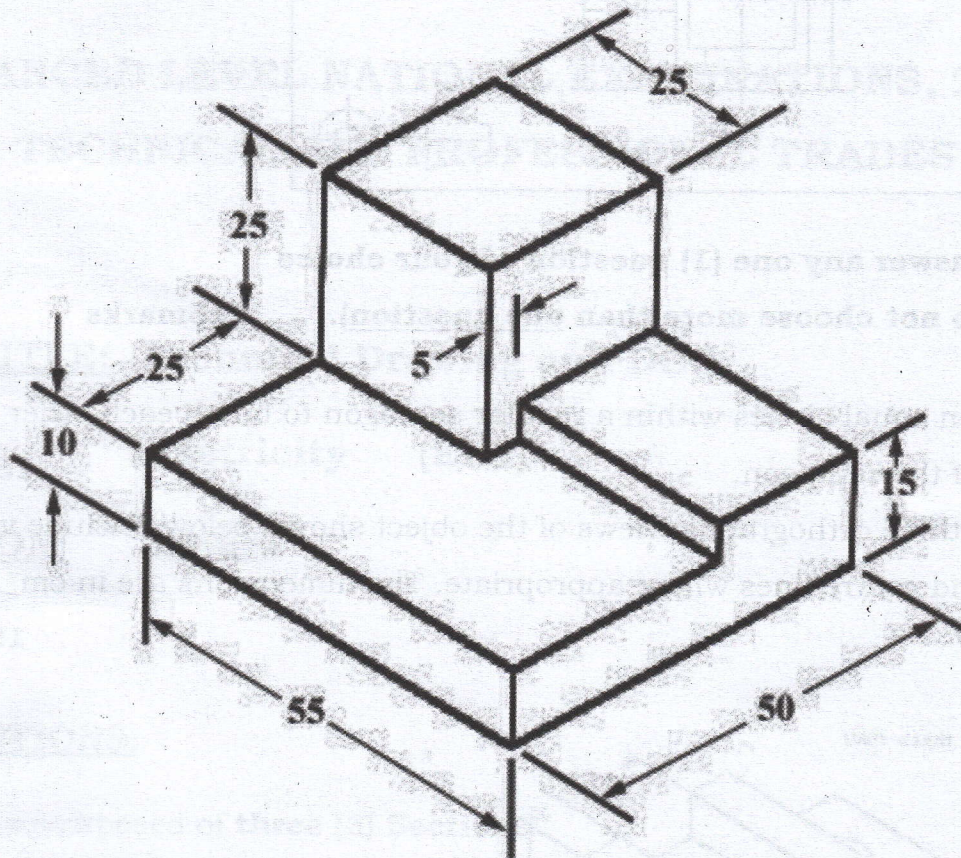
Section II. Answer any three (3) questions of your choice

(Do not choose more than three questions). 30marks

15. Outline the basic instruments used in technical drawing. **10marks**

16. Complete detailed orthographic views of the drawing below. The views are to be drawn to full size. Include overall dimensions and hidden detail lines. The dimensions are in mm. **10marks**


17. Draw a circle and indicate the following components: **10marks**

a. Diameter	d. Normal	g. Arc	j. Segment
b. Centre	e. Radius	h. Secant	
c. Tangent	f. Chord	i. Sector	

18. A circular wheel of 50mm in diameter has a point P attached to its periphery. The wheel rolls without slipping along a perfectly staight tract whilst remaining in the same plane . Plot the path of point P for one half of wheel on the trac construct also the normal end tangent to the curve at the position reached after one- third of revolution of the wheel. **10marks**

19. According to the Orthographic Projection shown below, Sketch a full size view using the starting points indicated. **10marks**
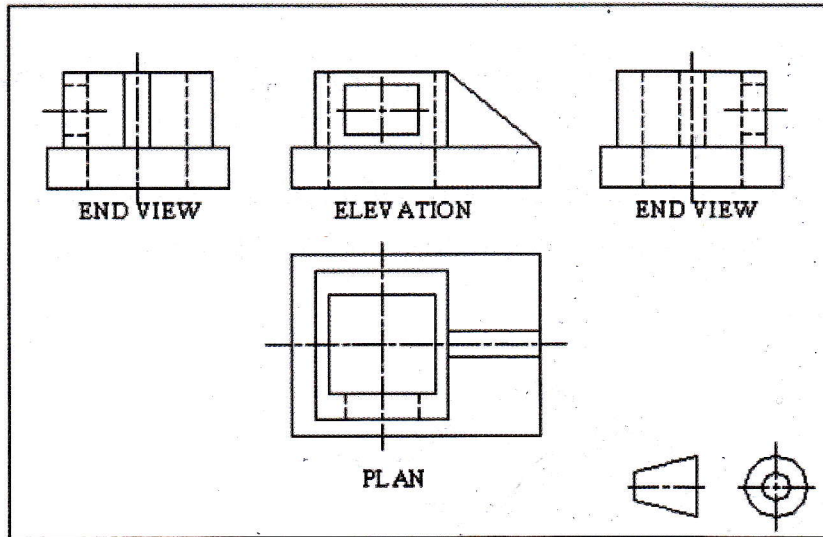

Section III. Answer any one (1) question of your choice

(Do not choose more than <u>one question</u>). **15marks**

20. Draw seven equal circles within a regular septagon to touch each other and one side of the septagon. **15marks**

21. Complete three orthographic views of the object shown below. Include visible, hidden, and centre lines where appropriate. The dimensions are in cm. **15marks**
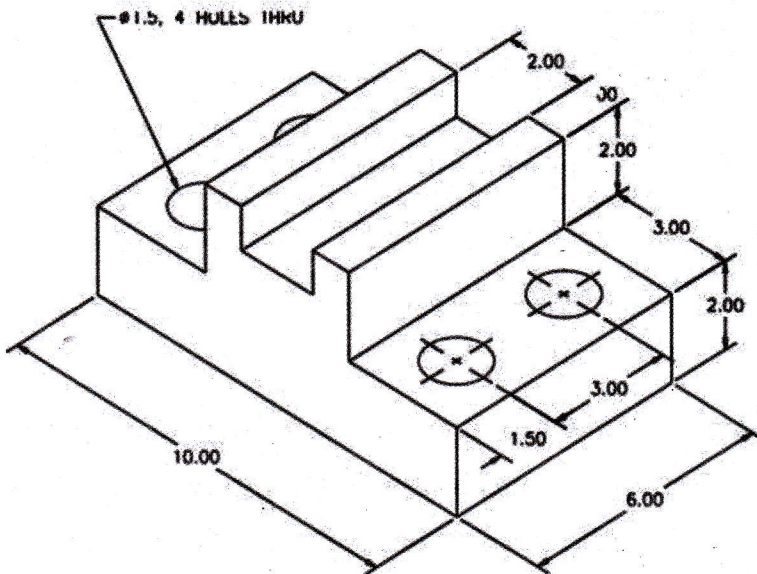
22. By rectangular method draw an ellipse which has major axis of 110mm and minor axis of 50mm. **15marks**