WORKFORCE DEVELOPMENT AUTHORITY

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ADVANCED LEVEL NATIONAL EXAMINATIONS, 2017, TECHNICAL AND PROFESSIONAL TRADES

EXAM TITLE: TECHNICAL DRAWING AND D.C.G

OPTION: Construction (CST)

DURATION: 3 hours

INSTRUCTIONS:

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

Section I: Fifteen (15) compulsory questions.	**55 marks**
Section II: Attempt **any three (3)** out of five questions.	**30 marks**
Section III: Attempt **any one (1)** out of three questions.	**15 marks**

The use of drawing materials is recommended.

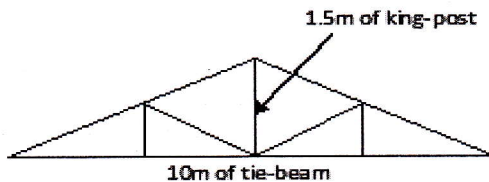## Note:

Every candidate is required to carefully comply with the above instructions. Penalty measures will be applied on their strict consideration.
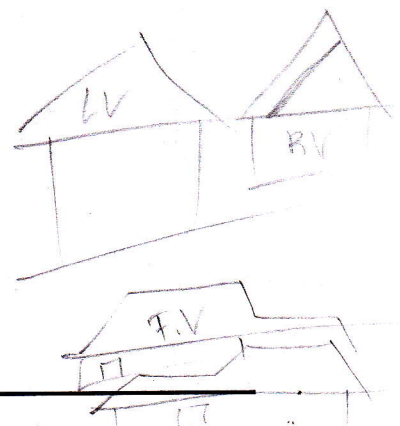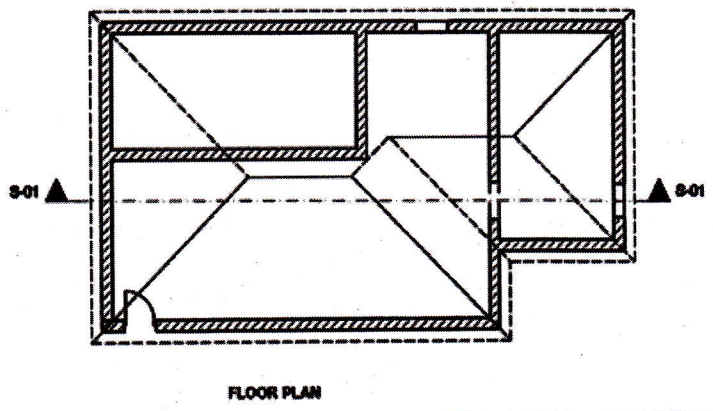
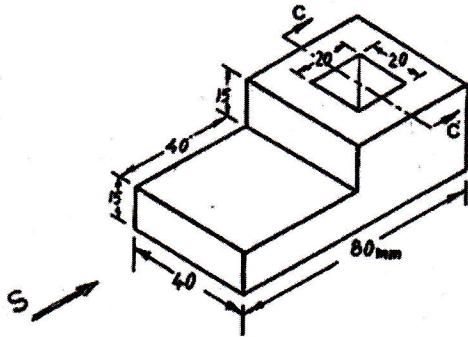## Section I. Fifteen (15) Compulsory questions   55 marks

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01. List down any six informations that should be found in a title block.

3 marks

02. What are the sizes of the drawing paper from A0 to A 4 Formats ?

5 marks

03. Explain any three elements of dimensions.   **3 marks**

04. Give one example of : full size scale, reducing scale, and enlarging scale respectivelly.   **3 marks**

05. A line of 5cm is drawn on the drawing paper to represent the actual length of 10mm show the type of scale in calculating R.F of scale. **3 marks**

06. Use the convention symbols in section materials to show :
Mass concrete, Brick work, and Block work.   **3 marks**

07. State the function of site plan.   **3 marks**

08. For 40% slope of a roof truss and king post of 2.5m,
calculate the length of tie-beam of triangle truss required.   **5 marks**

09. For the sketch of truss below ; show its slope in **degrees** and in **percentage**.   **3 marks**

1.5m of king-post

10m of tie-beam

10. Highlight the three principles of dimensioning.   **3 marks**

11. Explain the types of pictorial projection.   **3 marks**

12. What is meant by (a) floor plan and (b) section of a house ?   **4 marks**

13. Outline the steps of drawing a floor plan.   **4 marks**

14. From the following figure, draw its views **(F.V; B.V; R.S.V; L.S.V)** by sketching be concentrated on shape instead of size.   **4 marks**
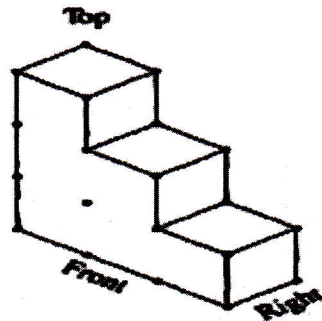

FLOOR PLAN

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15. Draw the front view, right side view, top view from the direction (S) and the sectional view C – C, for the given objects by respecting the dimensions in mm. **6 marks**

Section II. Choose and answer any three (3) questions. **30 marks**

16. Discuss the four stages followed in drawing. **10 marks**

17. An area of $250 cm^2$ was measured on plan, using a planimeter. Given that the plan scale is 1:500, calculate the ground area in m^2. **10 marks**

18. Based on the figure, sketch the views asked below :

i) Top view   ii) Front view   iii) right view

10 marks

19. A. Distinguish the following statements, showing which are correct and the ones which are false.

☆ When the cutting plane is perpendicular to the axis and cuts all the generations of a cone, the section obtained is an Ellipse

☆ The front view is obtained when an object is projected on vertical plane

☆ When a line is parallel to HP it will not have H.T

☆ When a line is parallel to VP it will not have V.T

☆ The shorter distance between two points is called a circle

☆ Isometric drawing is also known as isometric view.

B. Copy the sentences below and fill in the blanks with suitable word.

❖ The abbreviation BIS stands for...

❖ The abbreviation ISO stands for...

❖ .... is the study of construction of geometric figures having two dimensions.

❖ .... is used as the profile of a gear tooth.   **10 marks**

20. A) Explain the terms mentioned here below :

      a. Object line   c. The center line

      b. Hidden feature line   d. The leader

B) Classify the styles of freehand lettering.   **10 marks**

Section III. Choose and answer any one (1) question.   **15 marks**

21. By layout, draw a floor plan of small private dwellings (4.80m x 9.30m) gable roof 1 Bedroom with 2 windows, 1 living room with 2 opposite windows. Main entrance of single door, and Overhang is 40 Cm.
Make all dimensions by general principles on floor plan, the scale is 1:100.
Calculate the number of sheet cover of 2,50m of length and 80cm for width **(NB:** overlap in all sides when covering the roof has to be ignored, and the slope of the roof is 30%**).**   **15 marks**

22. In drawing, represent the lines below as it is requested.

    (a) Visible line   **(c)** Section line

    (b) Hidden line   **(d)** Center line

    (e) Dimension & Extension lines

    (f) Cutting- plane & viewing-   **(g)** Short – break line
        plane line   **15 marks**

23. With free hand drawings show the different types of windows hung.

                                             15 marks