WORKFORCE DEVELOPMENT AUTHORITY

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ADVANCED LEVEL NATIONAL EXAMINATIONS, 2015, TECHNICAL AND PROFESSIONAL TRADES

EXAM TITLE: Technical Drawing and D.C.G

OPTION: Public Works (PWO)

DURATION: 3hours

INSTRUCTIONS:

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

Section **I**: Seventeen **(17)** questions, all **Compulsory.**   **55marks**

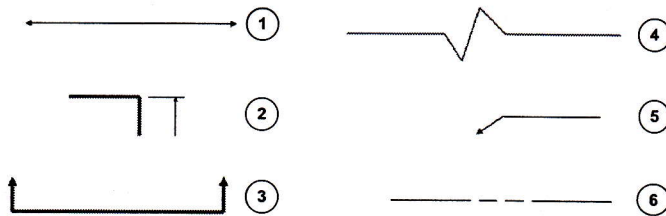Section **II**: Five (5) questions, **Choose Three (3) only.**   **30marks**

Section **III**: Three (3) questions, **Choose only One (1).**   **15marks**

The use of calculator is admitted

Every candidate is required to strictly obey the above instructions. Punishment measures will be applied to anyone who ignores these instructions.
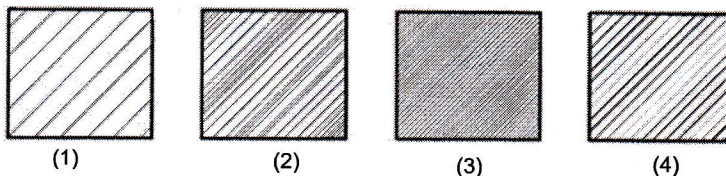
Section I. Seventeen (17) Compulsory questions.   55marks

01. A half-moon protractor is divided into how many degrees?   **1mark**

02. What is the primary unit of measurement for civil engineering
drawing and design?   **1mark**

03. How do axonometric and oblique sketches show objects?   **1mark**

04. How does a plane parallel to the plane of projection appear?   **2marks**

05. What is the type of line composed of one long dash on each end
with a short dash in the middle?   **2marks**

06. Name following lines used in technical drawings:

6marks

07. In dimensioning, what are symbols for:

　i. spherical radius,

　ii. depth

　iii. spherical diameter?   **3marks**

08. Make observation of below section linings and judge if they are "correct" or
"incorrect".

(1)　　　　　(2)　　　　　(3)　　　　　(4)

4marks

09. What is the use of following drawing instruments:

　i. Compass,

　ii. T-square,

　iii. Set Square

　iv. Protractor?   **4marks**

10. How many reference lines are needed to create an isometric drawing?
Use a sketch to show their orientation with respect to horizontal plane.

4marks

11. Fill in the missing word(s):

  a. Two points perspective is also known as...........................

  b. The intersection of the ground plane with the picture plane
     is...............................

  c. Perspective drawings are classified according to their number of.........
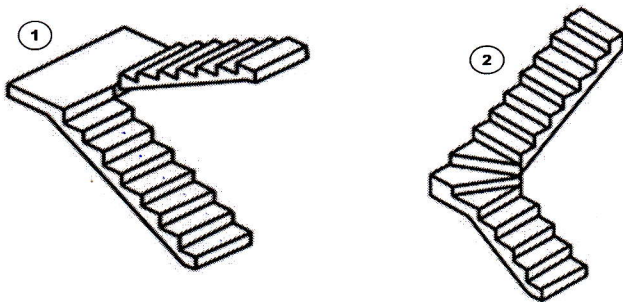
  3marks

12. Define the following terms used in landform drawing:

  a) contours

  b) Elevations

  c) Landscape maps **6marks**

13. Sketch in plan view the following staircases :

  4marks

14. Complete missing information about full section and half section in table below:

Properties / Section type	Cutting plane passage	View obtained
Full section		
Half section		

  4marks

15. Write "B", "C" and "D" in uppercase block letters. **3marks**

16. Differentiate enlarging scale from reducing scale. **4marks**

17. Look at the following list and find out elements not necessary in the title block:

  - Date of drawing   - Duration of the project   - Projection symbol

  - Unit of measurement   - Date of drawing   - Copy right clause

  - Project schedule   - Project cost

  3marks

Section II. Answer any three (3) questions of your choice

(Do not choose more than <u>three questions</u>).   30marks

18. Draw and define the circle and its terminology:
    a. Tangent
    b. Normal
    c. Diameter
    d. Chord
    e. Radius
    f. Circumference
    g. Arc
    10marks

19. a) Name the types of scaling used here below:
    i)   1:50
    ii) 1:1
    iii) 5:1
    b) What do you understand by arc? Give the process followed to find the center of an arc.
    10marks

20. a) Give the styles of freehand lettering. Give also their sub-types.

    b) Spacing is the distance which is to be left between two adjacent letters in types of lettering. What are the rules for the space between two lines?

    10marks

21. Industrial objects are manufactured in different materials. Use the conventional lines to indicate the material presented below:
    a. Concrete
    b. Brick work
    c. Lead, Zinc, White metal
    d. Glass
    e. Wood, plywood
    10marks

22. a) Define a Triangle.
    b) Give the types of triangles
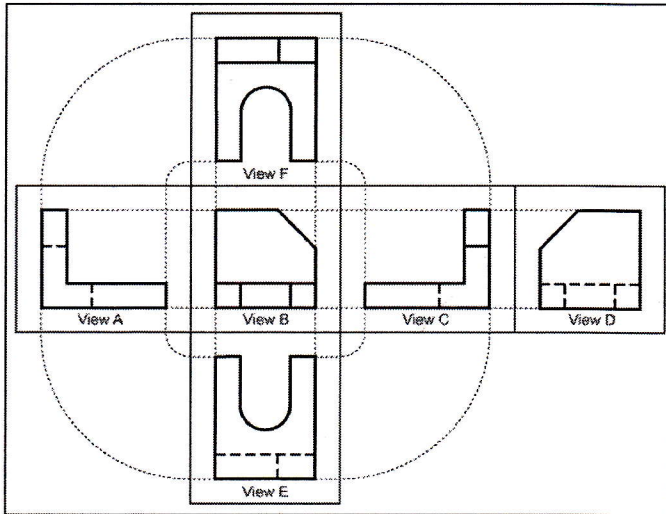   c) Draw a triangle to show all its parts (Use the geometrical terminology).
    10marks

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

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

23. Identify the views shown in the figure below:

View A: ....

View B: ....

View C: ....

View D: ....
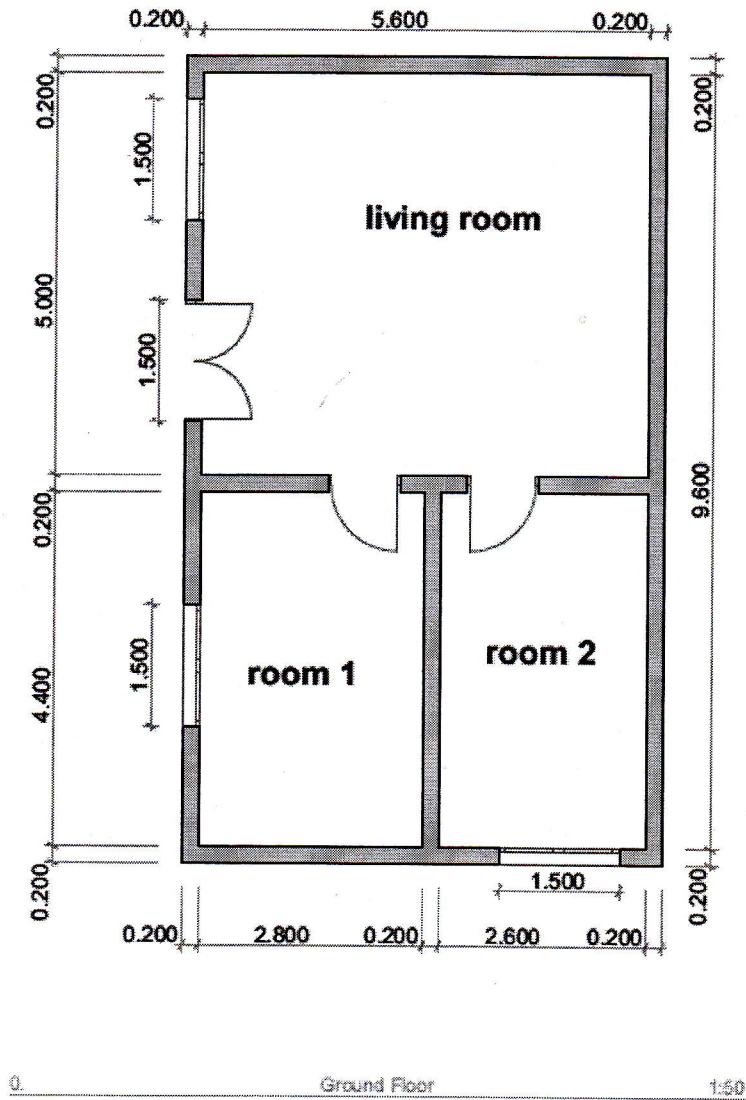
View E: ....

View F: ....

15marks

24. In drawing there are conventions used for various lines. Fill in the table below by showing description of a given line and two (2) general applications of your choice.

Line	Description (Type)	General application
A ——————————	....	....
D —— — — — — —	....	....
G ~~~~~~~~~~	....	....
H —/\—/\—/\—	....	....
E ■— — — — —■	....	....

25. Propose your own roof plan, and make the front elevation of this floor plan

Ground Floor   1:50

15marks