

**PWO – Technical Drawing and
Domestic Electricity**

WORKFORCE DEVELOPMENT AUTHORITY

T096

**Thursday, 07/11/2013
8:30 - 11:30 AM**



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**ADVANCED LEVEL NATIONAL EXAMINATIONS 2013;
TECHNICAL AND PROFESSIONAL TRADES**

EXAM TITLE: Technical Drawing and Domestic Electricity

OPTION: Public Works (PWO)

DURATION: 3hours

INSTRUCTIONS:

This paper contains **three (3)** Sections :



- | | |
|--|----------------|
| Section I: Fifteen (15) questions, all compulsory. | 55marks |
| Section II: Five (5) questions, <u>choose any three (3).</u> | 30marks |
| Section III: Two (2) questions, <u>choose any one (1).</u> | 15marks |

Section I. All the questions are compulsory 55marks

- 01. Using a sketch, show the format of drawing sheet (Relation from A₀). 4marks
- 02. What is the size of A₃ and A₄ format? 2marks
- 03. Give the 3 types of scales. 3marks
- 04. What are the two (2) main lettering in drawing? 2marks
- 05. Complete the following table : 6marks

Type of line	Use of the line
Dashed line	
Thin line	
Mixte line	

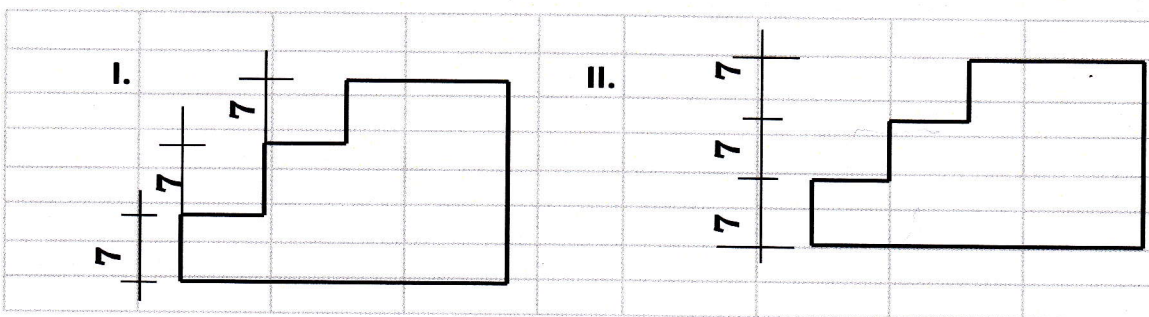
- 06. Give the 3 principles of view in drawing 3marks
- 07. Calculate the scale of a line where 1cm represents 0.5m. 2marks
- 08. Trace a circle of 6cm diameter and indicate the dimensions correctly. 3marks
- 09. A line of 1cm is drawn on the drawing sheet. If the actual length of this line is 1km. Calculate the representative fraction (RF) of the scale and name it. 5marks
- 10. Complete the following table: 4marks

No	Hachures	Names
1	?	Masse concrete
2		
3		?
4	?	Natural soil

- 11. Choose the correct dimensioning:

a.

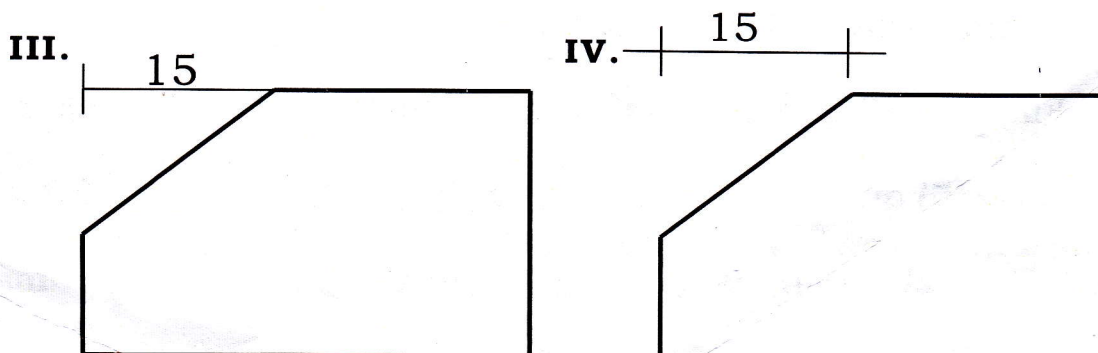
1mark



tail medium

b.

1mark

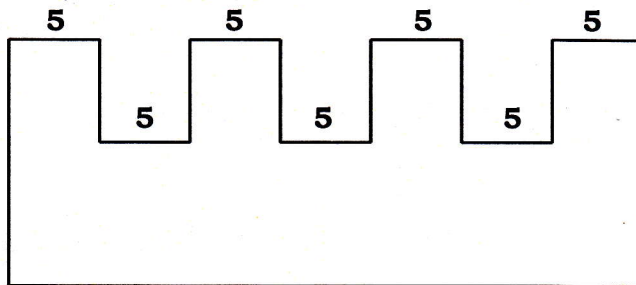


12. a) A line of a road of 5cm is drawn on the drawing sheet to represent an actual length of 10mm. Show the type of scale in calculating the RF of the scale. **2marks**
 b) What are the two (2) practice methods used to indicate the dimensions on drawing? **2marks**
13. What are the 3 ways in which the circuit may be connected? **3marks**
14. What are the two (2) units of electric power? **4marks**
15. Give the corresponding symbols of the following, using the table below: **6marks**
 a) Power supply general b) Resistor c) Ringer
 d) Variable resistor e) Switch off f) Hydro-electric power station

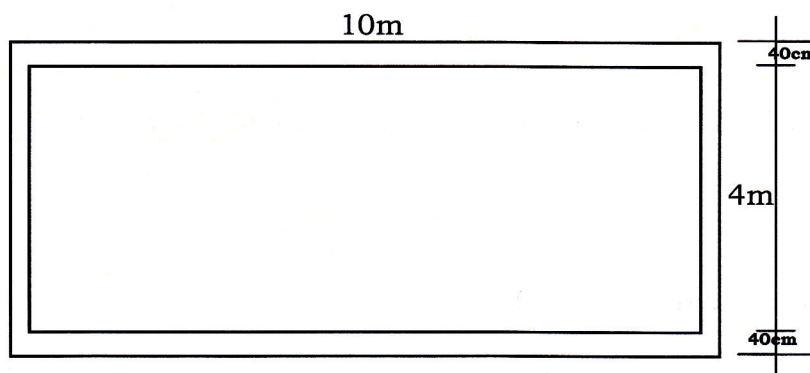
No	Symbols	Nomination
1		
2		
3		
4		
5		
6		

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

16. a) Make the dimensions correctly. **3marks**

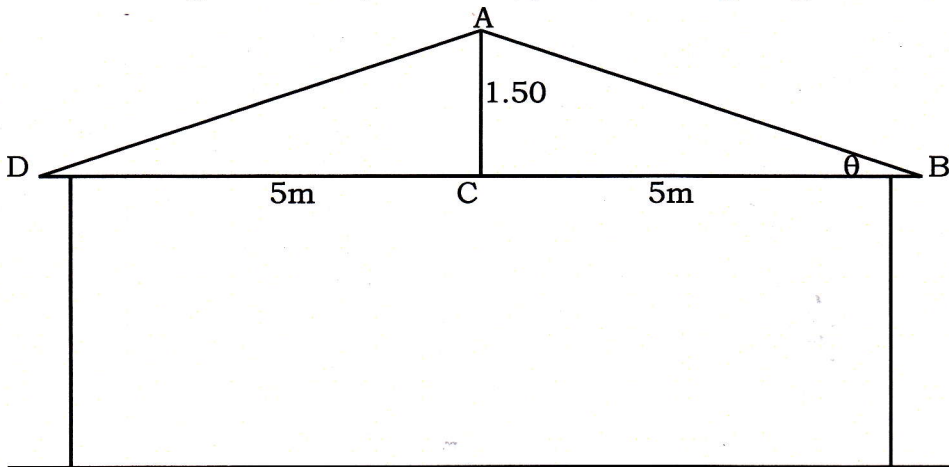


- b) Draw the plan here below on 1/ 100 and make the dimensions in good order. **7marks**



17. What are the main inscriptions to write in title bloc? **10marks**

18. Considering the roof represented by the following diagram :

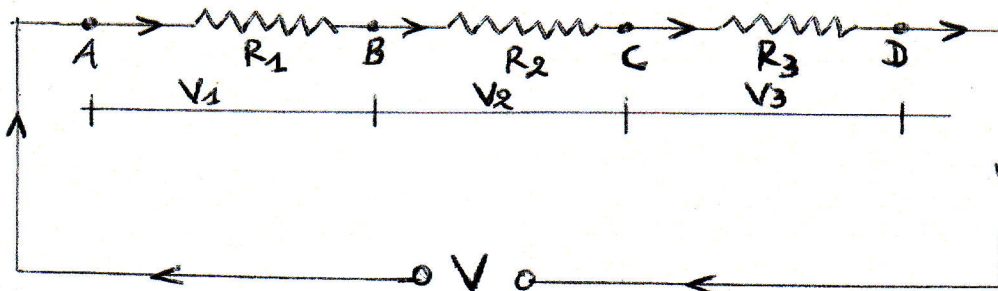


- a) Find its slope AB and the inclination angle θ . **4marks**
- b) Selecting the right triangle ABC, indicate the slope AB on the figure correctly. **6marks**

19. The energy absorbed in 10minutes by a piece of electrical apparatus from 24V supply is 132×10^6 joules. Calculate :

- a) The current I. **6marks**
- b) The quantity of electricity q in coulomb taken in 1minute. **4marks**

20. The three (3) coils A, B, C have resistance 4, 8 and 10Ω respectively. Using the following sketch, find the equivalent resistance when they are connected (a) in series, (b) in parallel. **10marks**



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

- 21. Using sketches, show:
 - a) Masonry in section. **5marks**
 - b) Lintel in RC in cross section (square lintel). **5marks**
 - c) What is the instrument used for:
 - i. Tracing of an angle; **1mark**
 - ii. Tracing of a perpendicular line to the horizontal line. **3marks**
 - d) What is the standard dimension of a door? **1mark**
- 22. Two electrostatic points charges of $+60\mu\text{c}$ and $+50\mu\text{c}$ exert are repulsive force on each other of 175N. What is the distance between two charges? **15marks**