

**PWO – Technical Drawing and
D.C.G**

T023

**Thursday, 17/11/2016
08:30 – 11:30**

WORKFORCE DEVELOPMENT AUTHORITY



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**ADVANCED LEVEL NATIONAL EXAMINATIONS, 2016,
TECHNICAL AND PROFESSIONAL STUDIES**

EXAM TITLE: Technical Drawing and D.C.G

OPTION: Public Works (PWO)

DURATION: 3hours

INSTRUCTIONS:

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

Section I: Fourteen (14) 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

Allowed materials: Ruler, square and compass

Note:

Every candidate is required to carefully comply with the above instructions. Penalty measures will be applied on their strict consideration.

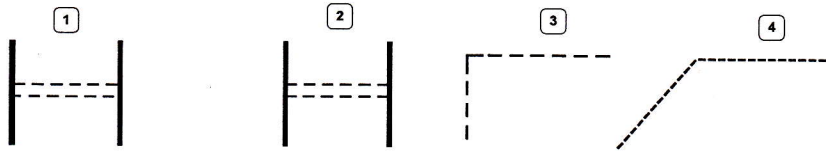
Section I. Fourteen (14) Compulsory questions

55marks

- 01. List down four (4) types of location drawing used in the construction process. **4marks**
- 02. What are the three (3) properties of a good sketch? **3marks**
- 03. What are two (2) standards used in orthographic projections? Sketch their symbols. **5marks**
- 04. List down four (4) principal types of projection used in technical drawing. **4marks**
- 05. Given below standard paper sizes, fill in the table their corresponding formats. **4marks**

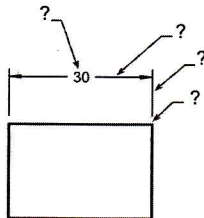
Sheet size (mm)	Format
594 X 841	?
297 X 420	?
841 X 1189	?
210 X 297	?

- 06. Make observation of the presentations below and say whether they are correct or incorrect.



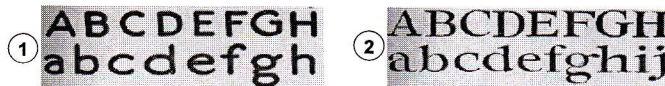
4marks

- 07. List down three (3) types of dimensions in terms of functionality. **3marks**
- 08. In dimensioning, how are the elements shown below by a question mark, called?

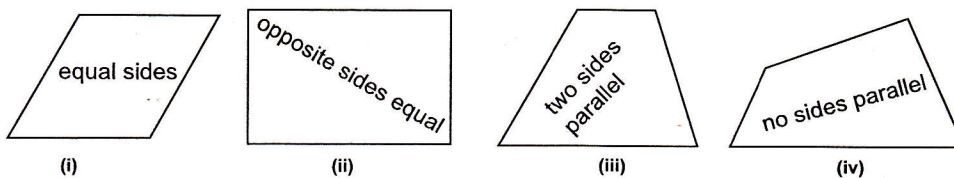


4marks

- 09. Mention four (4) main guiding principles of a proper dimensioning. **4marks**
- 10. List down six (6) main reasons of producing sectional views. **3marks**
- 11. List down general letter styles, and then differentiate the letter groups below by their appellations. **4marks**



- 12. Give specific names to quadrilateral figures below:



4marks

13. List the types of the following lines in their order of precedence:

Break line, cutting – plane line, dashed line, full line

4marks

14. State out ten (10) elements to be included on a sketch map.

5marks

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

30marks

15. (a) Fill in the blanks with suitable word (write the whole sentences). 4marks

- The abbreviation BIS stands for.....
- The abbreviation ISO stands for.....
- Plane geometry is the study of construction of geometric figures having dimensions.
-of circle is used as the profile of a gear tooth.

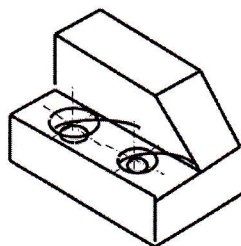
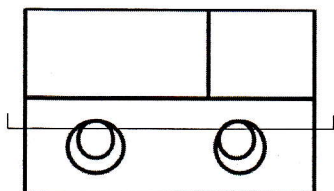
(b) Distinguish the correct from incorrect statements. Use the table below. 6marks

- ⊛ 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

Correct statements	Incorrect statements

16. List two (2) important informations to put on the longitudinal profile drawing of the road. Give the general rules for dimensioning. 10marks

17. From the information below produce the longitudinal section of this figure and name it A-A.



18. Draw a triangle and mark all its parts (use geometrical terminology). 10marks

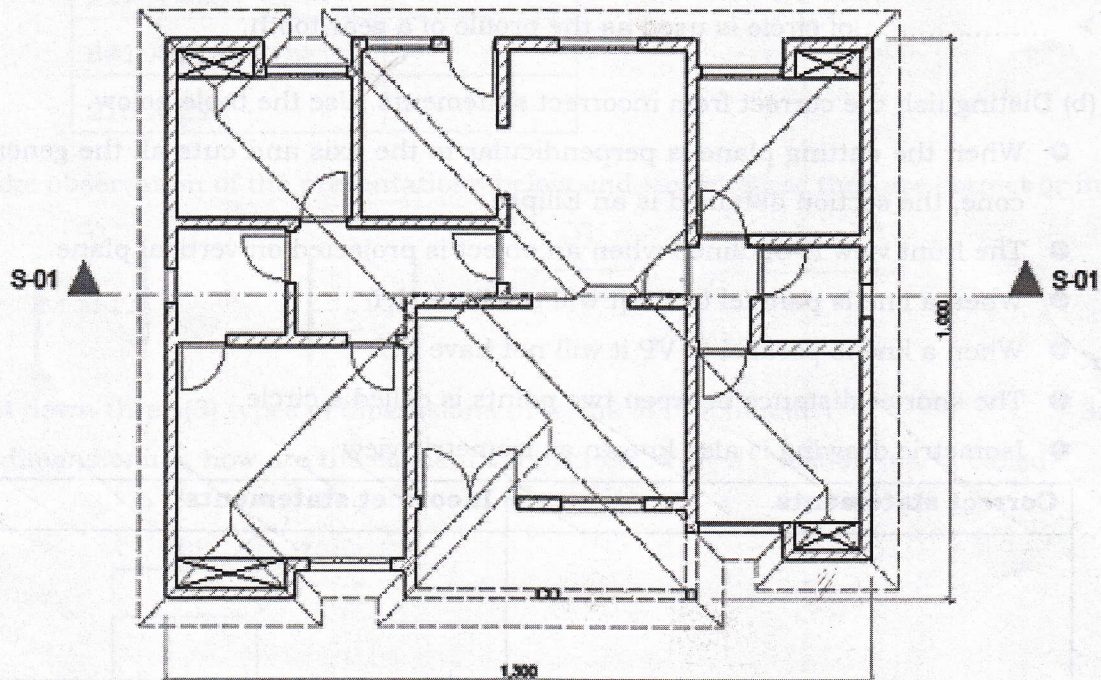
19. A) Give the styles of freehand lettering. Give also their sub-types.
 B) Spacing is the distance which is to be left between two adjacent letters in types of lettering. What are the rules for the space between two lines?

10marks

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

15marks

20. Produce a plan view of septic tanks of 15 users and put all the necessary information.
 21. Consider this plan shown below and make the section S-01.



D.

Ground Floor

1:100

the roof is starting at 3000 mm and has 25% as the slope, the main lintel is at 2400mm height, the foundation is 800mm deep.

22. Explain the importance of Technical drawing course in your career of public works (answer not above 10 lines).