

ELC –Technical Drawing and DCG

T006

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 DCG

OPTION: Electricity (ELC)

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

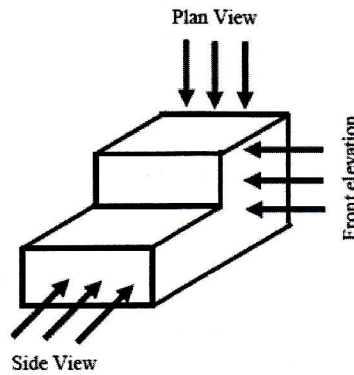
Section III: Attempt any one (1) out of three questions. 15 marks

Note:

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

01. Complete the detailed pictorial views of the drawing below:

5marks



02. How do you define technical drawing versus engineering drawing?

4marks

03. Give the functions of the following drawing instruments:

5marks

- a) Clinograph
- b) French curve
- c) T-square
- d) Protractor
- e) Divide

04. Complete the table below:

5marks

Format	Cut sheet (mm) or width x length
A ₁
.....	148 x 210
A ₀
A ₂	420 x 594
A ₃
A ₆

05. Give the difference between paper borders line and title block in paper presentation.

4marks

06. State four types of technical drawing.

4marks

07. A) What is meant by sectioning?

2marks

B) What is “direction of sight” in sectioning?

2marks

08. Define:

- a) Projection
- b) A polygon
- c) A view

5marks

09. Mention the difference between offset section and full section in technical drawing. **5marks**

10. Which of the following is not a pictorial drawing?
(isometric; multiview; perspective; axonometric) / Fill in the following sentence:
..... is not a pictorial drawing. **2marks**

11. Which of the following projection methods does not use projectors perpendicular to the projection plane?
(isometric; orthographic; oblique; axonometric) / Fill in the following sentence:
..... is a projection method that does not use projectors perpendicular to the projection plane. **2marks**

12. A circle will appear on an isometric drawing as a (n) **2marks**
(ellipse; cycloid; circle; parabola) / Fill in the sentence above.

13. Write the major difference(s) between perspective and parallel projection.
Choose the right answer (s) from the statements below:

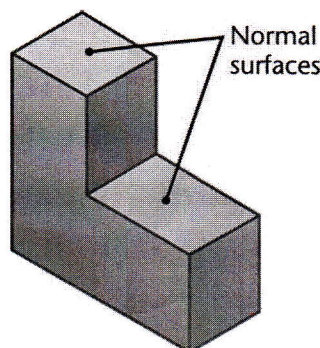
- o Parallel projection can only be used with objects containing parallel edges.
- o Perspective projection gives a more realistic representation of an object.
- o Parallel projection is equivalent to a perspective projection where the viewer is standing infinitely far away.

3marks

14. a) Define scale **2marks**
b) State and explain three (3) types of scale. **3marks**

Section II. Choose and answer any three (3) questions. 10marks each

15. With The Glass Box Align the six principal views of the following object.

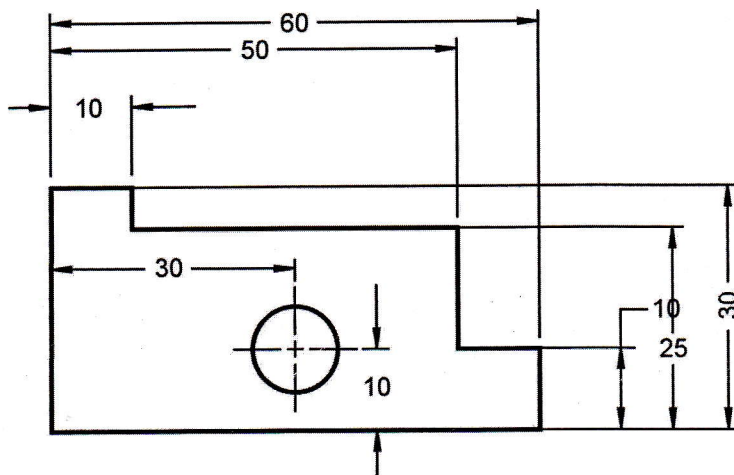


16. Draw two circles of equal radius of 8 cm and draw also the external tangent for those two circles.
17. A square, hexagon, heptagon and octagon have equal side of 40mm and the side AB is common for those entire four plans. Draw this diagram.
18. Draw a rectangular prism of base 50 mm × 40 mm and height 75 mm and its orthographic projection.
19. Draw a development of cylinder with diameter of base 30 mm and height 50 mm

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

15marks

20. List the dimensioning mistakes and then dimension the object correctly.



21. A regular hexagon of 40mm side has a corner in the HP. Its surface inclined at 45° to the HP and the top view of the diagonal through the corner which is in the HP makes an angle of 60° with the VP. Draw its projections.
22. A cylinder of diameter of base 40 mm and height 50 mm is standing on its base on HP. A cutting plane inclined at 45° to the axis of the cylinder passes through the left extreme point of the top base. Develop the lateral surface of the truncated cylinder.