

**CST – Technical Drawing
and D.C.G**

T020

**Thursday, 29/11/2018
08:30 – 11:30 AM**

WORKFORCE DEVELOPMENT AUTHORITY



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**ADVANCED LEVEL NATIONAL EXAMINATIONS, 2018,
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: 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

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.

01. Explain the following types of lines:

- a) Center Lines
- b) Guide Line

(4 marks)

02. List down at least ten drawing instruments.

(5 marks)

03. What do you understand by "Title block"?

(4 marks)

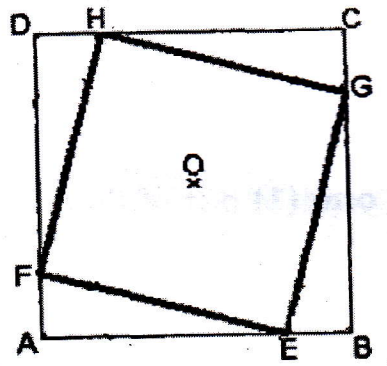
04. Fill the following table of paper sizes with corresponding measurements or formats

Measurements in mm	Format
594 x	A2
..... x	A3
..... x.....	A1

(5 marks)

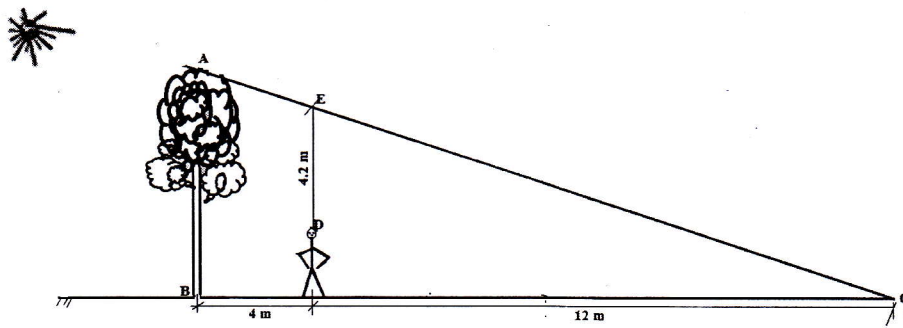
05. The figure below shows the two shapes, ABCD and EFGH with common center at O. Determine the sides of EFGH shape, if the portions DH, CG, AF and EB all are of the same dimensions of 1cm and each side of square ABCD is equal to 4 cm.

(4 marks)

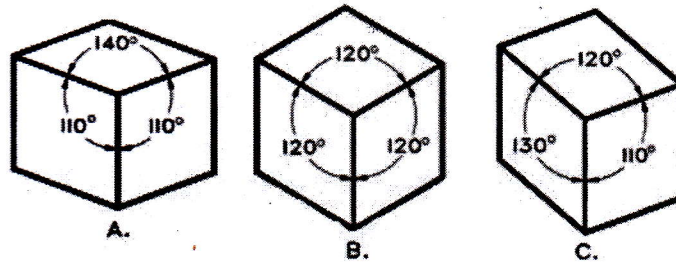


06. In the following figure, the person is standing at 4 m away from the tree of 8 m height and its shadow is 16 m. Determine the real height of the person.

(4 marks)

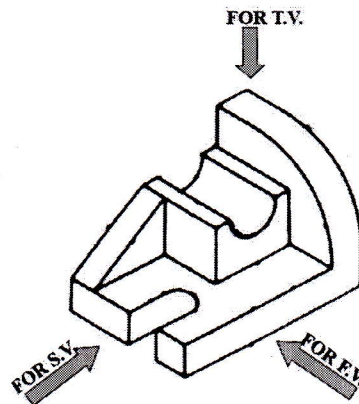


07. Name and explain the two types of projections. **(5 marks)**
08. Two cities are distant of 250 Km and the distance is represented by a line of length of 50 mm on a map. Construct a scale to read 320 Km and indicate the distance of 280 Km on it. **(4 marks)**
09. What do you understand by « Plain scale » ? **(2 marks)**
10. Given the following figures A, B and C. Which figure represent isometric view, and give the name of the other two remaining views: **(2 marks)**



(4 marks)

11. Explain at least four of the terms used on the circle as its parts. **(4 marks)**
12. Given the pictorial view for below figure, draw other three views (T.V, F.V and S.V) by first angle projection method.



(3 marks)

13. For building construction project, after work there is a requirement of a type drawing, what is that drawing and explain why? **(4 marks)**

14. In modern and technical drawing, there is a number different softwares used to produce good drawing ; among them there are AutoCAD and ArchiCAD. Explain briefly three advantages of using CAD software in drawing design. **(3 marks)**

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

15. (a) What do you understand by "Projection" in technical drawing ?

(b) Discuss by explaining the two types of projections in drawing.

(10 marks)

16. What do you understand by "perspective" in drawing? Discuss 5 types of views. **(10 marks)**

17. (a) Determine three types of pencils according to their hardness and give their use.

(b) Fill in the name of the hardness for each grade of pencil :

HB:

F:

H:

2H:

3H:

4H, 5H, 6H:

9H:

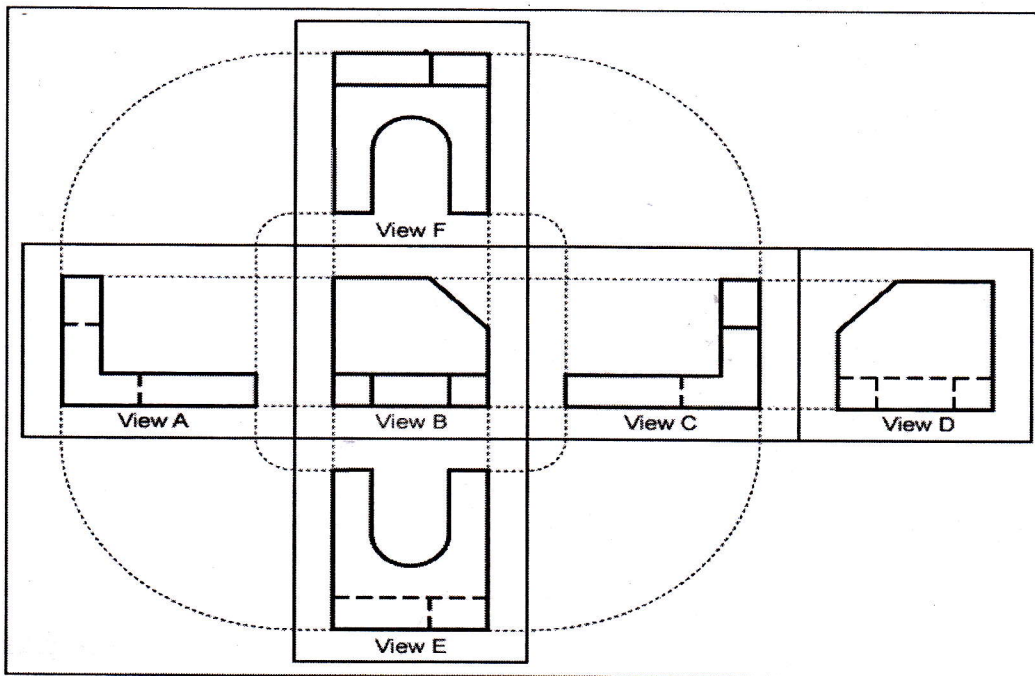
(10 marks)

18. Industrial objects are manufactured in different materials. Use the conventional lines to indicate the material presented below:

- a) Concrete
- b) Brick work
- c) White metal
- d) Glass
- e) Wood

(10 marks)

19. The figure below shows different views, try to name them accordingly:



(10 marks)

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

15 marks

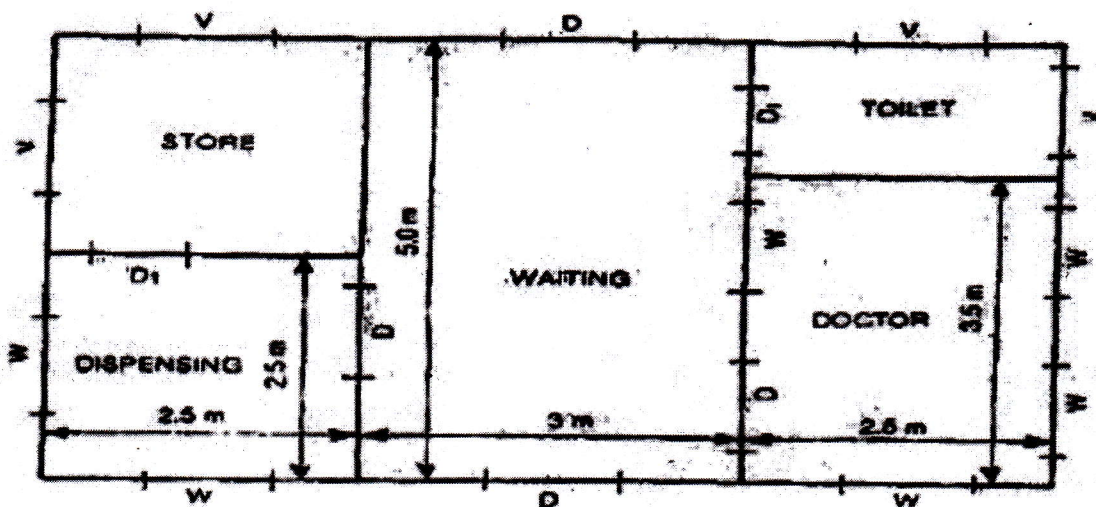
20. Neatly sketch and name five types of roof.

(15 marks)

21. List and explain clearly four elements to consider during the orientation of a building.

(15 marks)

22. The line plan of a small dispensary for student's hostel is shown below :



The following are some specifications :

- Level of the plinth above the ground : 20 cm
- Height of the ceiling from floor : 3 M
- Thickness of the walls : 30 cm
- Doors (paneled, D : 2.1mx1.1m
D1 :2mx0.8m
- Windows, glazed, W : 1.2mx1m
- Ventilators : 0.6mx1m
- Roofing : Reinforced cement concrete 15 cm thick
- Parapet wall : Height 1m and thickness 10 cm

Suitable steps and sun shades are to be provided.

Make a Plan of building at window sill level and show its front view.

(15 marks)