073206T4ARC

ARCHITECTURAL TECHNOLOGY LEVEL 6

CON/OS/ARC/CC/02/6/A

Prepare and Interpret Technical Drawings

July/August 2024

TVET CURRICULUM DEVELOPMENT, ASSESSMENT AND CERTIFICATION COUNCIL (TVET CDACC)

WRITTEN ASSESSMENT

Time: 3 HOURS

INSTRUCTIONS TO CANDIDATES

1. Maximum Marks for each question are indicated in brackets ( ).
2. This paper consists of **TWO** sections: A and B.
3. Answer questions as per instructions in each section.
4. You are provided with a separate answer booklet.

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This paper consists of FOUR (4) printed pages.

Candidates should check the question paper to ascertain that all pages are printed as indicated and that no questions are missing

SECTION A (40 MARKS)

Attempt ALL questions in this section.

1. Technical drawing makes use of equipment to draw regular shapes. Highlight any FOUR drawing equipment that are used in technical drawing. (4 Marks)

2. Drawing materials come in different shapes and sizes depending on their uses. Name FOUR drawing materials needed in a technical drawing class. (4 Marks)

3. To ensure a long lifespan for one's tools and equipment, it is important to take care of them. Outline THREE methods of ensuring care and protection of technical drawing tools and equipment. (3 Marks)

4. Orthographic projection is the representation of three-dimensional objects in two-dimensional form. Give TWO differences between first angle orthographic projection and third angle orthographic projection. (4 Marks)

5. There are different types of lines used in technical drawing. Discus any TWO types of lines used in construction of pictorial drawings. (4 Marks)

6. Draw a line AB of length 160mm. Using a T- square, set squares and a compass, divide the line AB in the ratio 2:5:7. (4 Marks)

7. Construct the following angles using a ruler and compass only;
   a) 60^0
   b) 105^0
   c) 75^0 (6 Marks)

8. Construct an isosceles triangle ABC when given the base AB=50mm and length of equal sides AC=BC= 70mm. (4 Marks)

(Award 2 marks for correct drawing, 1 mark for proper line work and 1 mark for accuracy, 2+1+1=4 marks)

9. Construct a parallelogram when given two sides MN=60mm, MP=35mm and inclining angle PMN = 60^0. (4 Marks)

10. Construct rectangle QRST where QR=65mm and RS=35mm (3 Marks)

SECTION B (60 MARKS)

Answer any THREE questions in this section.

11. Figure 1, shows orthographic views of an object. Draw the object in isometric

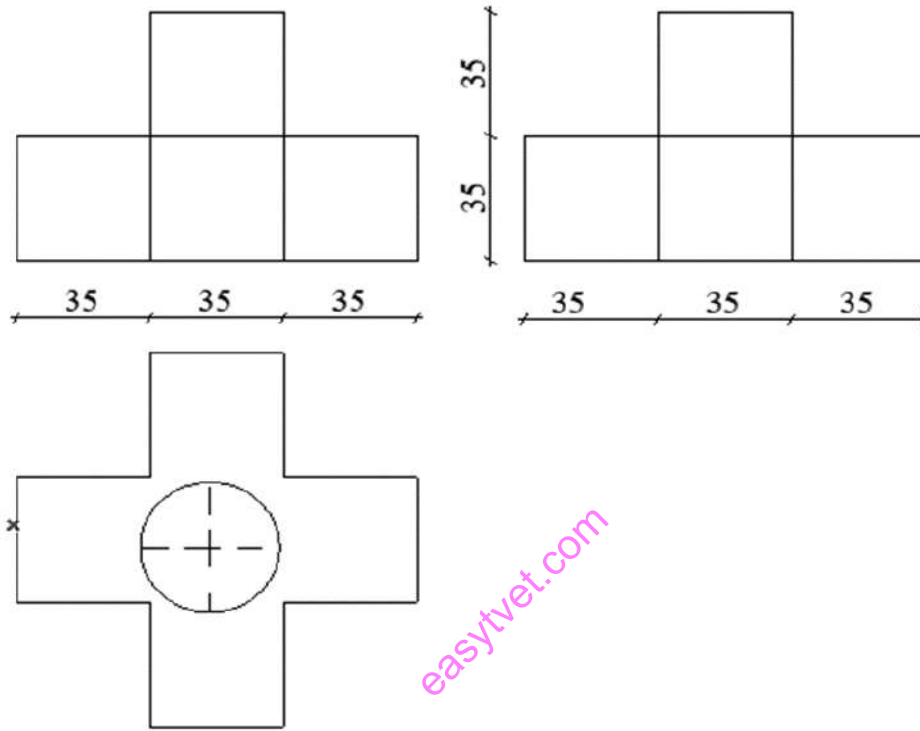projection.   (20 Marks)
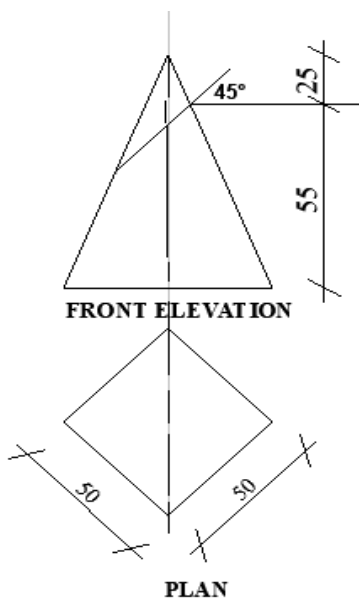

Figure 1

12. Figure 2 is a right square-based pyramid.

Figure 2.

Draw;

   a) The plan of the pyramid

   b) The development of the pyramid   (20 Marks)

13. Figure3 below shows a pictorial view of an object. Draw the orthographic views in first angle projection.   (20 Marks)
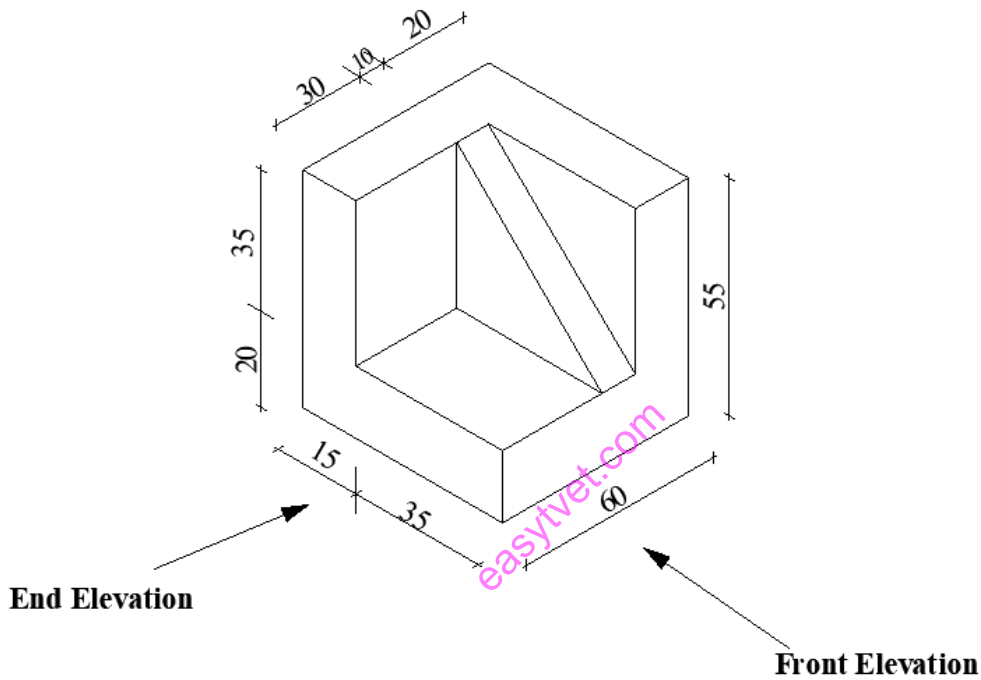

Figure 3

14. Computer Aided Design and Drafting (CADD) software is used in production of technical drawings as an alternative to hand drafting.

   a) Explain FIVE advantages of using CADD software in technical drawing.   (10 Marks)

   b) An ellipse is the locus of a point that moves so that its distance from a fixed point (called the focus) bears a constant ratio, always less than 1, to its perpendicular distance from a straight line (directrix). Draw an ellipse using the concentric circle method given the major axis is 100mm and the minor axis is 70mm.   (10 Marks)

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