TEVETA

Technical Education, Vocational and Entrepreneurship Training Authority

DIPLOMA IN AUTOMOTIVE/HEAVY EQUIPMENT ENGINEERING

LEVEL 6 YEAR 1 EXAMINATIONS

FINAL INTEGRATED SUMMATIVE EXAMINATION

SITTING: JULY/AUGUST 2025

SUBJECT: ENGINEERING DRAWING 1

TIME: THREE (3) HOURS **TOTAL MARKS: 100**

PASS MARK: 50

INSTRUCTIONS TO CANDIDATE

1. Draw a Title Block on the right bottom part of the Border Line of your answer sheet provided. Write your Examination Number, N.R.C number, Name of Programme and Institution
2. There are FIVE (5) questions in this paper
3. Attempt question ONE (1) as compulsory and any THREE (3) questions
4. All dimensions are in millimeters (mm).
5. Show your constructions clearly.
6. Answer sheets will be provided
7. Where dimensions are omitted they may be estimated
8. Do NOT use a pen for drawing or writing on drawing paper. Use of ink on a drawing paper will lead to zero mark for that section of the question
9. Scientific calculators are allowed in the examination room. However, Programmable calculators and cellphones are NOT allowed.

DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO

QUESTION 1 - COPULSORY

a) Create a borderline on your drawing sheet and insert a title block in the bottom right-hand corner. The title block should include the following details:

(i) Name of Institution
(ii) Centre Number
(iii) Examination Number
(iv) NRC Number
(v) Programme Name [5 marks]

b) **Fig.Q1** shows a sliding block in isometric projection. Construct and produce the given machine component 1st angle orthographic projection showing:

(i)A sectional end elevation in the direction of arrow E [17 Marks]
(ii)The front in the direction of arrow F [9 Marks]
(iii)The plan [9 Marks]

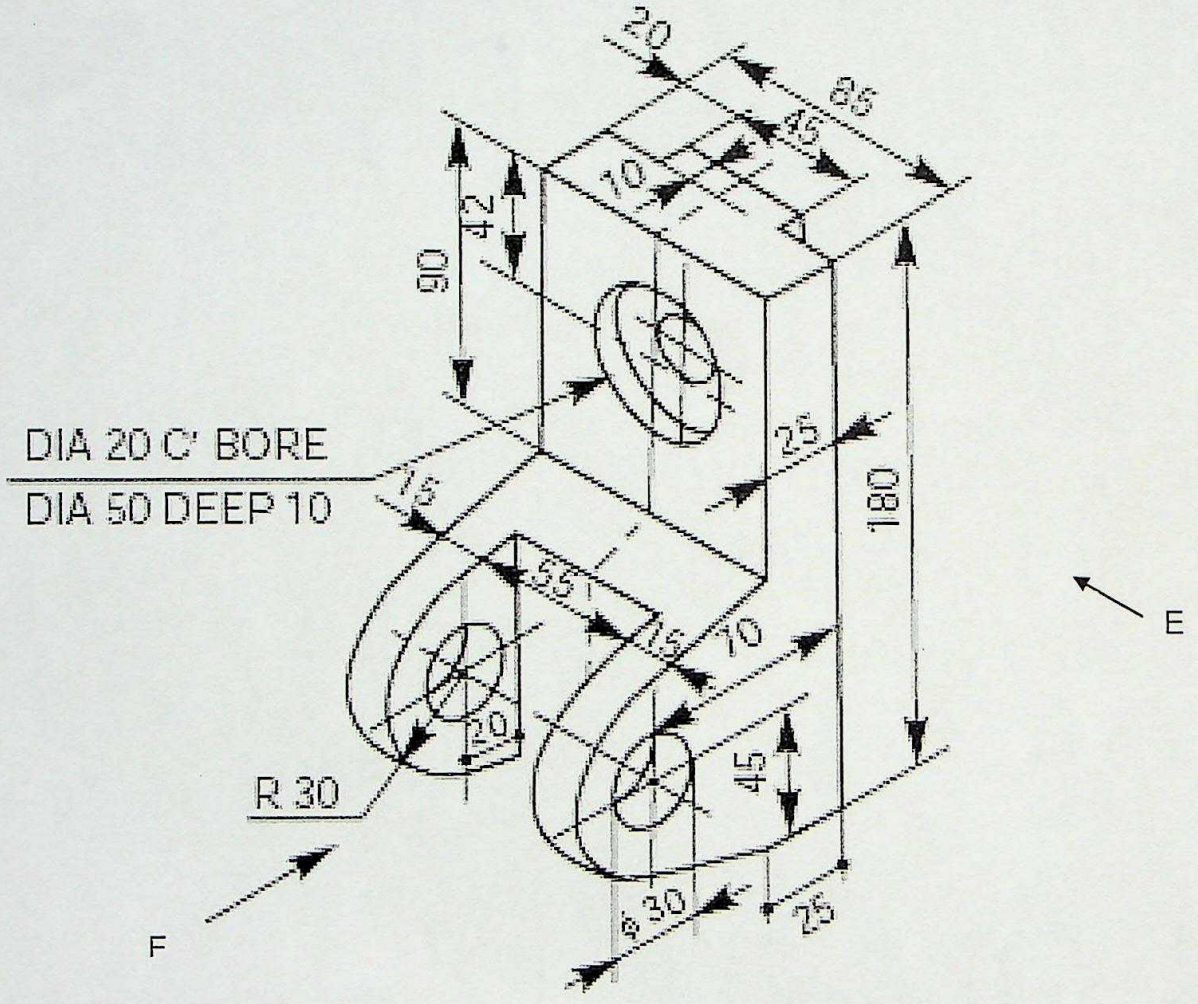


Fig.Q1

[Total:40 Marks]

Q1

QUESTION 2

Fig.Q2 shows an automotive towing device presented in orthographic projection. Do not copy the views however Construct an isometric diagram of the given information taking **X** as the lowest point. [20 marks]

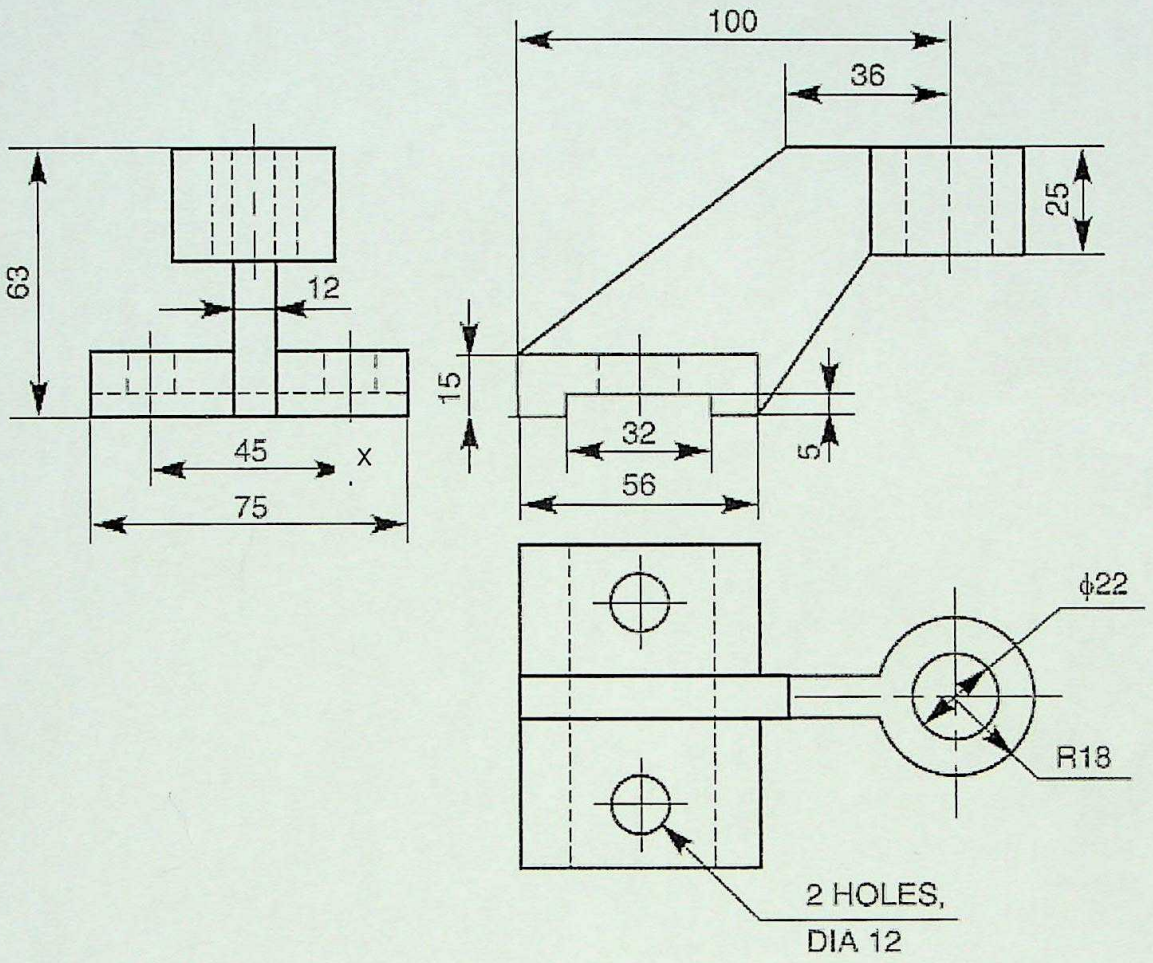


Fig.Q2

[Total:20 Marks]

QUESTION 3

(a) Below is a list of abbreviations used in engineering drawing. Reproduce and interpret by writing the full meaning of each of the following abbreviations.

(i) CYL

(ii) INT

(iii) DRG

(iv) LH

(v) A/F

(vi) TOL

(vii) A/C

(viii) PCD

(ix) NTS

(x) BRG

[10 Marks]

(b) Construct clearly a conversional representation for each of the following components below.

(i) External screw threads

(ii) Internal screw threads

(iii) Straight Knurling

(iv) Bearing

(v) Diamond Knurling

[10 marks]

[Total:20 Marks]

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QUESTION 4

(a) Construct a horizontal Ellipse of major diameter 100 and minor diameter 30, using the concentric method. Note show all methods used to obtain centers and arcs.

[10 marks]

(b) Construct an equilateral triangle of side 50 and divide its base line into 4equal parts.

[10 marks]

Total [20 Marks]

QUESTION 5

Fig.Q5 shows a belt connected to an electric motor. The machine is however unable to function correctly due to the loss belt. Reconstruct the component below and show all construction methods used to obtain centres and arcs. [20 marks]

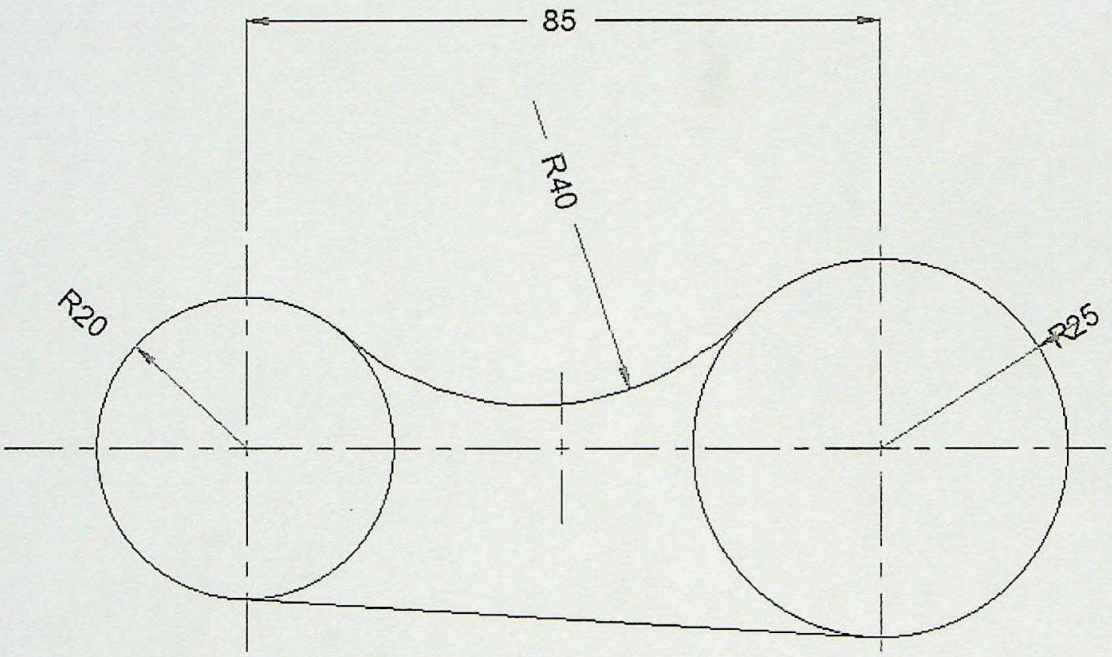


Fig.Q5

Total [20 Marks]