

4.21 DRAWING AND DESIGN (449)

4.21.1 Drawing and Design Paper 1 (449/1)

1. (a) TIVET • Technical Vocational Education Training.
NITA • National Industrial Training Authority.
TTI - Technical Training Institute.

(3 x 1 = 3 marks)

- (b) Uses of a beam compass:

- Drawing circles and arcs of very large radii.
- Stepping off large distances.

(2 x 1 = 2 marks)

2. (a) Terms in the design process:

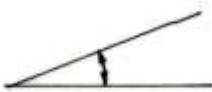
- Primary objective is the functionality of a design solution or a workable solution.
- Secondary objective refers to value addition, eg. comfort, aesthetics etc.
- Design brief refers to the narration of the problem solution.
- Prototype is the model or sample of the finished product.

(4 x 1 = 4 marks)

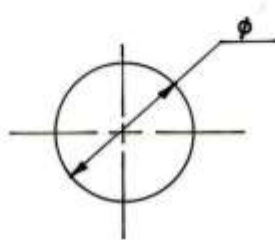
- (b) Types of dimensions



Linear dimensions



Angular dimensions



Circular dimensions

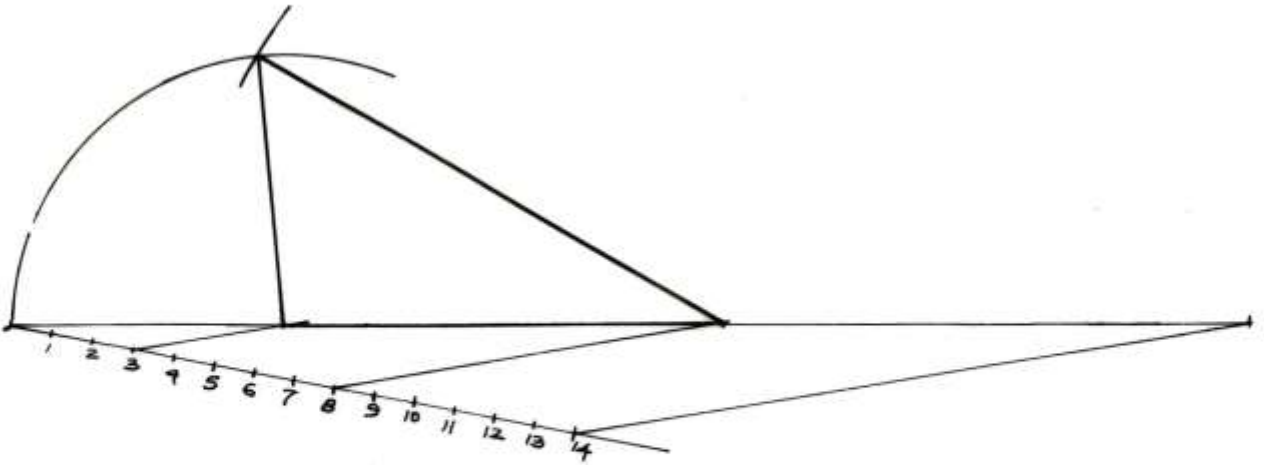
(3 x 1 = 3 marks)

3. (a) Uses of:

- Key board - for typing/keying in information and giving commands.
- Mouse - For giving commands.
- Monitor - To display whatever is going on or taking place in the computer.
- Hard disk - For storage of information i.e. primary storage media.

(4 x 5 = 20 marks)

4.



Drawing and measuring 165mm	= 1/2
Dividing the line into 14 equal parts	= 1
Determining 3 5 & 6 = 1%	= 1/2
Identify 3 5 6 portions	= 11/2
Joining the points	= 1/2
	<hr/>
	= 4 marks

5. (a) Factors to consider when lettering:

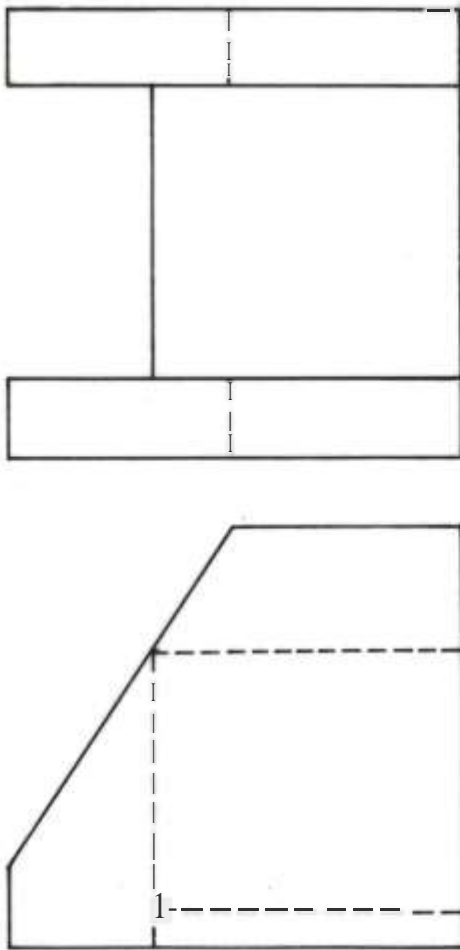
- Use of guidelines to give uniformity.
- Proportional and equal spacing of letters and numerical.
- Uniform strength/outline of letters and numerical.
- Consistency in style i.e. italic or gothic.
- Ascending and descending for lower case letters.
- Proportionality with the paper size.

(Any 4 x 1 = 2 marks)

(b) Effects of poor disposal of eng. materials.

- Global warming.
- Harmful to the soil.
- Harmful to the aquatic life.
- Unsightly environment.

(Any 3 x 1 = 3 marks)



FRONT

Hide & Hide

Z

5 0 0 0 0

4 0 0 0

VIEW

5 0 0 0 0

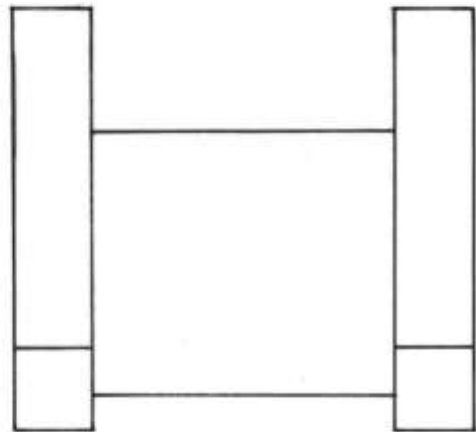
4 0 0 0

5 0 0 0 0

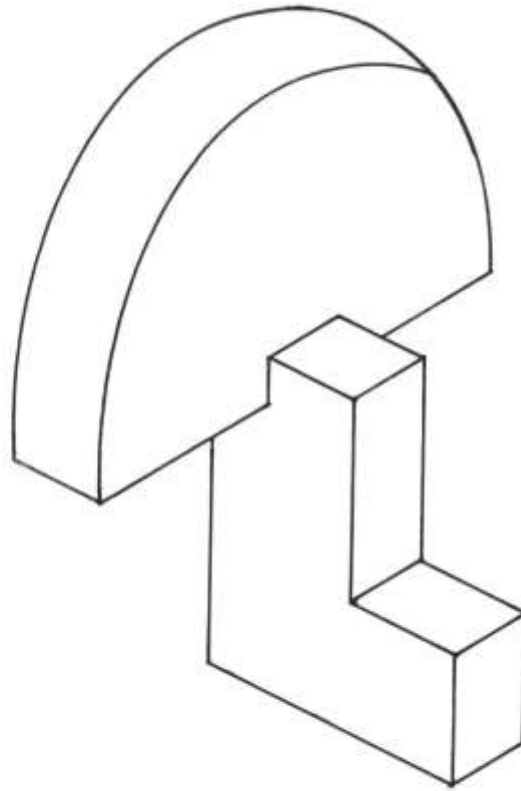
4 0 0 0

Pr

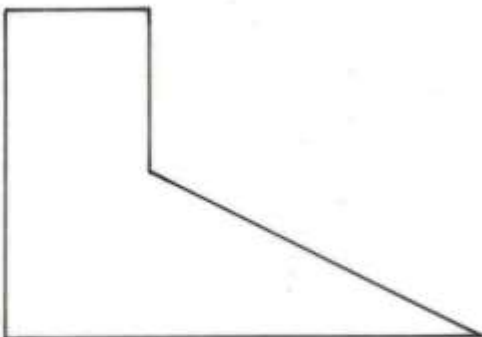
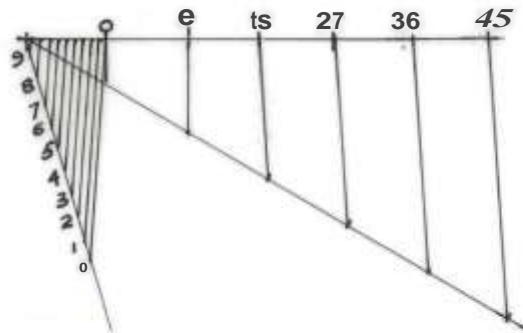
TOTAL = 1 0 0 0 0



7.



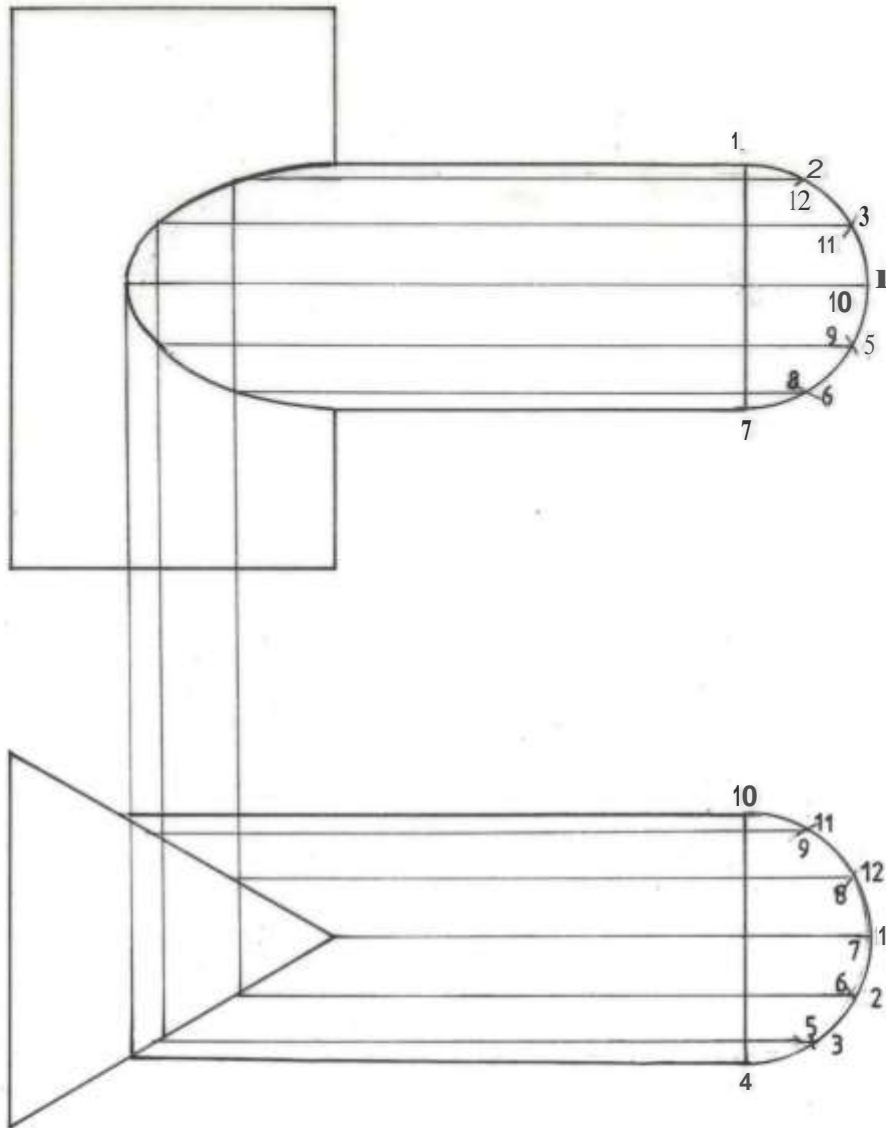
8.



PLANE SCALE:

Main readings	z	1
Scale readings	=	1
Maximum reading	z	1
Application (drawing)	•	2
	=	<u>5marks</u>

9.



Front Elevation

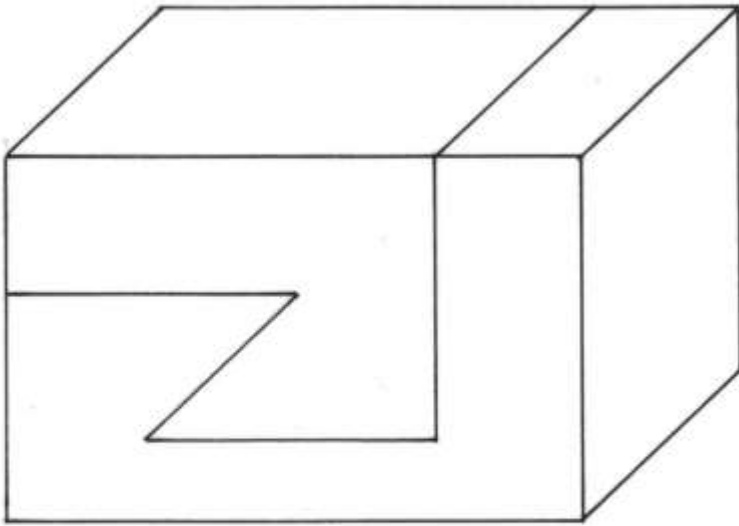
Construction of circle or semi-circle	1 mark
Correct projection to the prism	$\frac{1}{2}$ mark
Plotting the points on the prism	1 mark
Smooth curve	1 mark
	34 marks

Plan

Construction of circle or semi-circle	1 mark
Correct projection the prism	$\frac{1}{2}$ mark
	14 marks

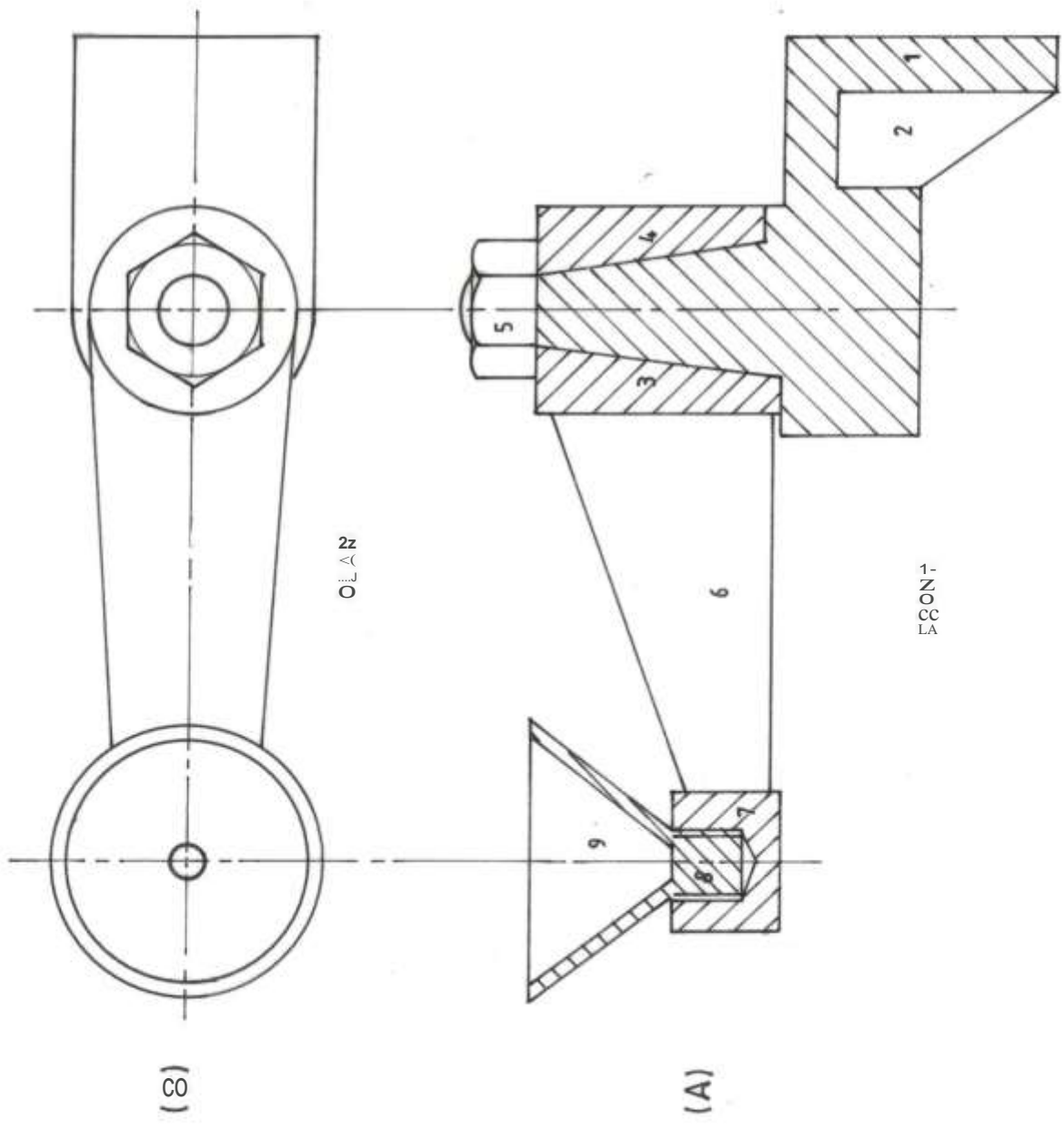
Total 5 marks

10.



5 faces @ $\frac{1}{2}$	= $2\frac{1}{2}$
Oblique	= 1
Proportionality	$\approx \frac{1}{2}$
	<hr/>
	= 4 marks

Accept alternative direction of viewing



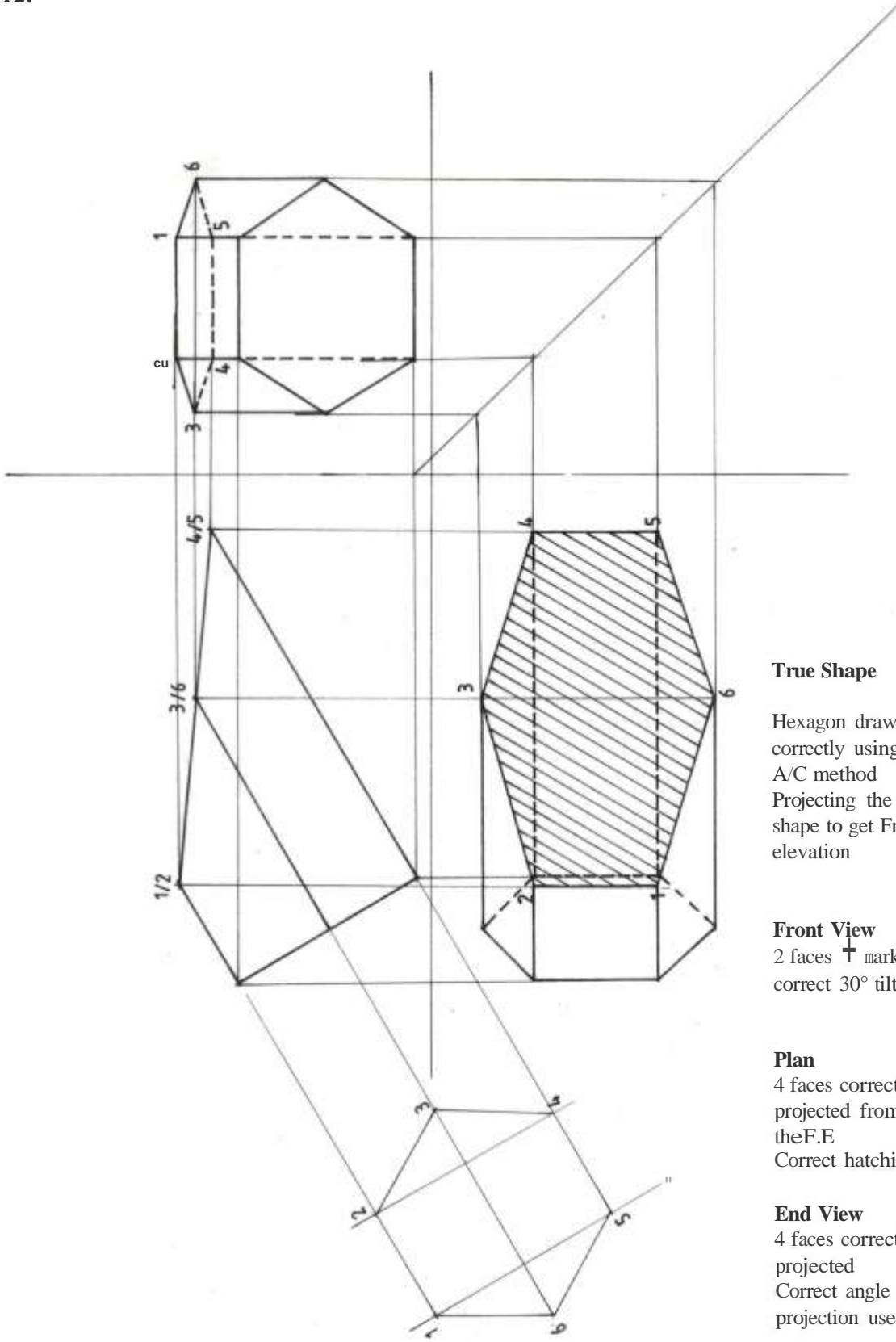
FRONT VIEW

0	1	2	3	4	5
0	1	2	3	4	5
0	1	2	3	4	5
0	1	2	3	4	5

TOP VIEW

0	1	2	3	4	5
0	1	2	3	4	5
0	1	2	3	4	5
0	1	2	3	4	5

12.



True Shape

Hexagon drawn correctly using A/C method 3 marks
 Projecting the true shape to get Front elevation # mark
35 marks

Front View

2 faces + mark 1 mark
 correct 30° tilting 1 mark
 1 mark

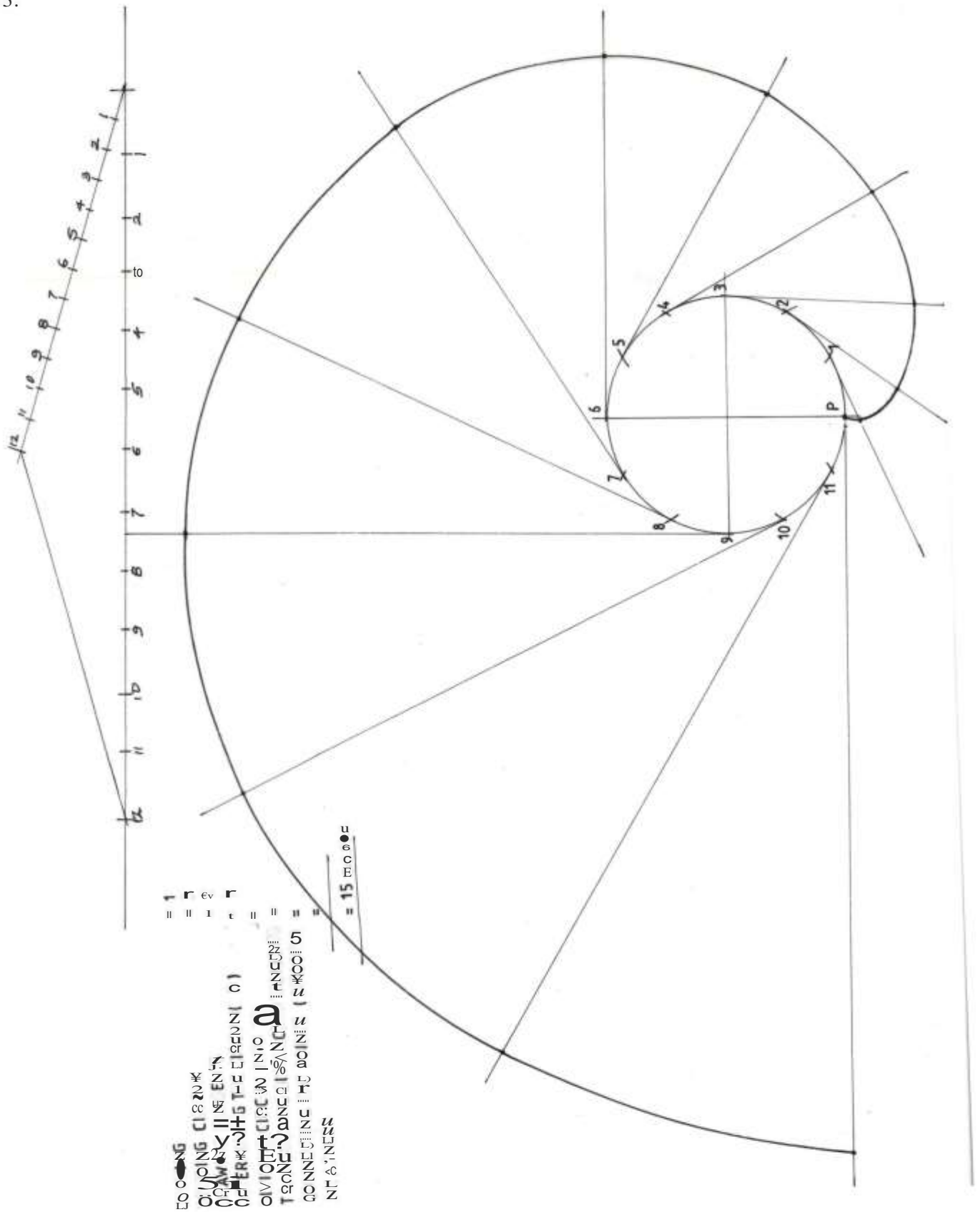
Plan

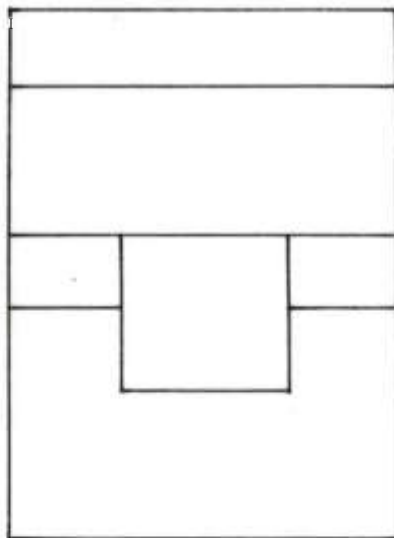
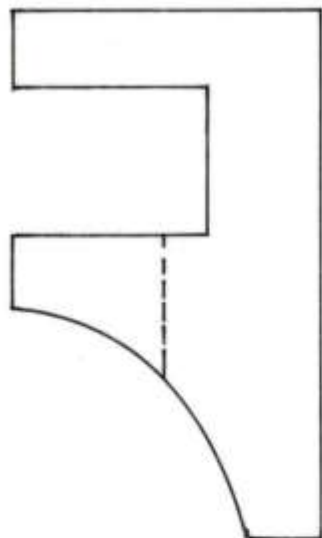
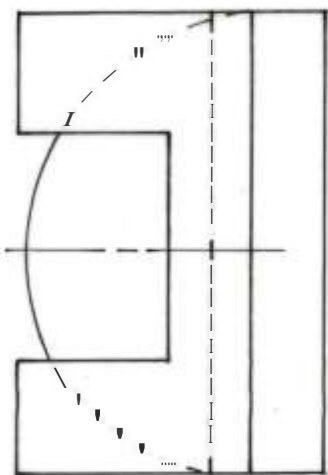
4 faces correctly projected from the F.E 4 marks
 Correct hatching 1 mark
5 marks

End View

4 faces correctly projected 4 marks
 Correct angle of projection used 1 mark
5 marks

Total 15 marks





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LATU
ECCONT
Face
CUNO
HNDIC: Tabil
a. < N
ECLYN Ox1 = 0
END
Cases Fe1 i t
Top: X=1 = 4
T1/0 CK
: 0000000
TOTAL Lu Fc6.Xu
    
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