26.0 DRAWING AND DESIGN (449)

26.1 Drawing and Design Paper 1 (449/1)

1 (a) Requirements
(i) Correct thickness of the lines must be maintained.
(ii) Care must be taken in positioning.
(iii) Dimension lines should always have arrow heads.
(any 2 x ½) = 1 mark

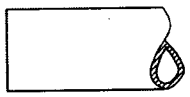
(b) Reasons
(i) To ensure that they maintain their accuracy.
(ii) To avoid physical damage.
1 mark

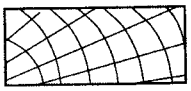
2 (a) Industrial Training Centres
Are government or NGO institutions which offer marketable skills at artisan and/ or craft levels. 1 mark

(b) Factors to Consider
Cleanliness
Accuracy (any (2 x ½) = 1 mark
Technique

3 (a) Communicating Design ideas
(i) Words
(ii) Sketches/ drawings
(iii) Models
(iv) Mock-up/ realia
(v) Pictures/ photos (any 4 x ½) = 2 marks

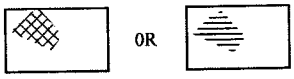
(b) Conventions

(i) 

(ii) 

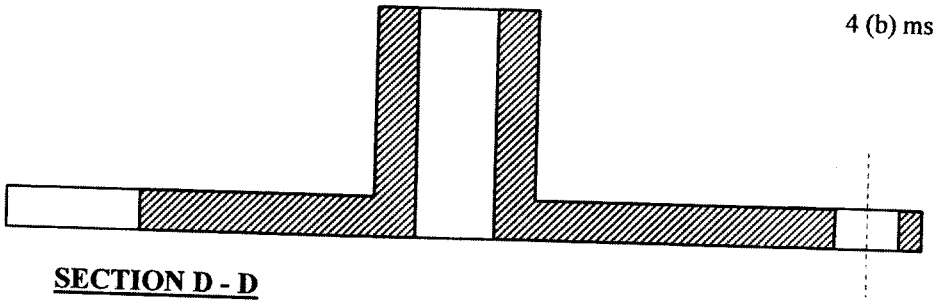
$4 \times {}^{1}/_{2} = 2$

(iii) 

(iv) 

4 (a) Composition
(i) Brass - copper and zinc
(ii) Stainless steel - Iron and chromium (4 x ½)= 2 marks

(b)



4 (b) ms

SECTION D - D

Correct view - 1
Hatching - 1
(2 marks)

5 (a) (i) (I) 20:1 means twenty units on the drawing paper represents one unit of the actual object.

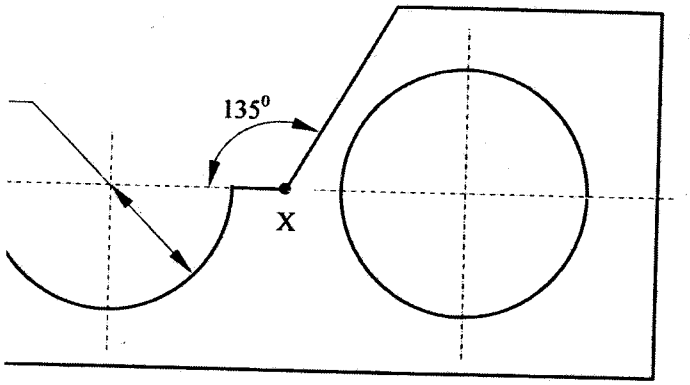
(II) 1:20 means that one unit on the drawing represents twenty units on the actual object. (2 x 1) = 2 marks

(ii) (I) Is applied in magnification e.g tiny parts like radio and clocks.

(II) Is applied in reduction e.g. house plans, maps e.t.c.

(2 x ½) = 1 mark

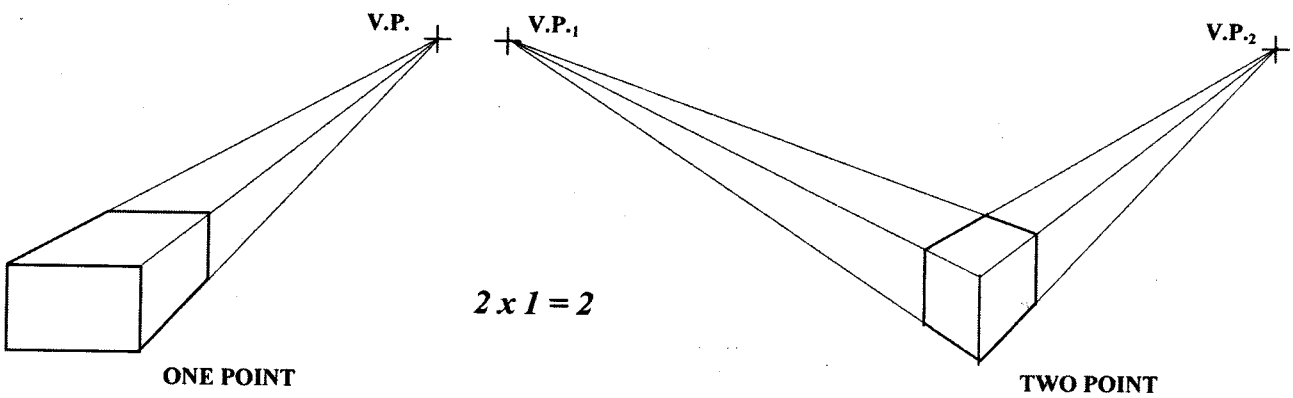
(b)



5(b) Ms

Dimension of 135° - 1mark
220° - 1mark = 2 marks

6.

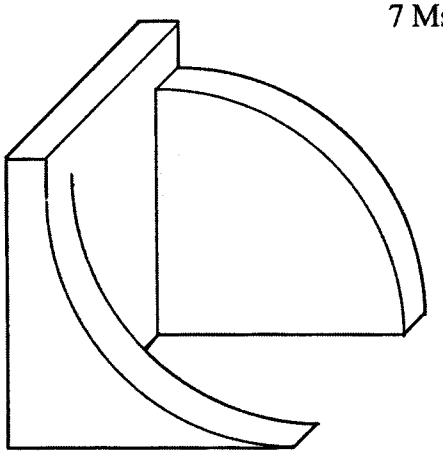


2 x 1 = 2

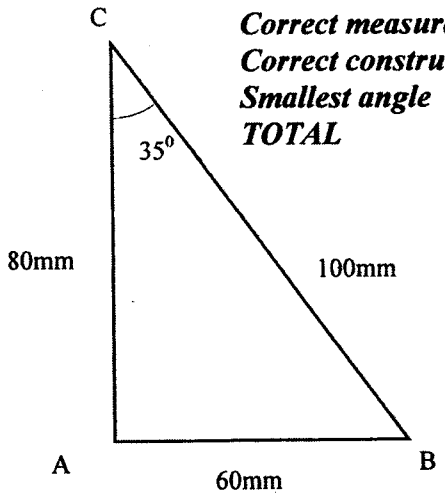
7.

7 Ms

6 Faces ($6x^1/_2$) = *3*



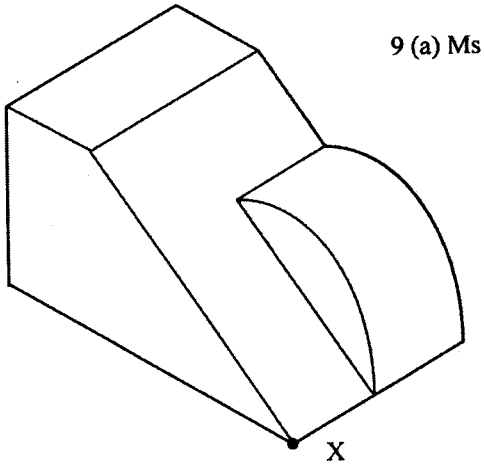
8.



Correct measurement of triangle sides = *1 ½*
Correct construction of triangle = *1 ½*
Smallest angle = *1*
TOTAL = *4 MARKS*

9. (a)

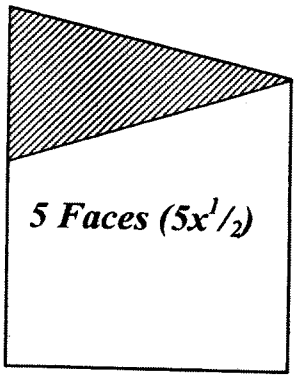
9 (a) Ms



5 Faces ($5x^1/_2$) = *$2^1/_2$*
Isometric = *$^1/_2$*

(b)

Sketch = 1 mark
Labelling = 2½ marks)
3½ marks)

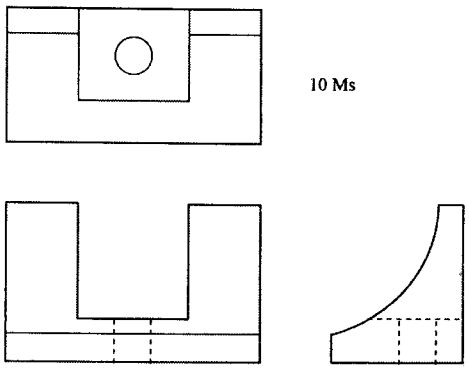


9(b) Ms

Faces (2x1/2)	***= 1***
Projection lines	***= 1***
Hatching (2x1/2)	***= 1***
Dimensions	***= 1***
TOTAL	***= 4***

10.

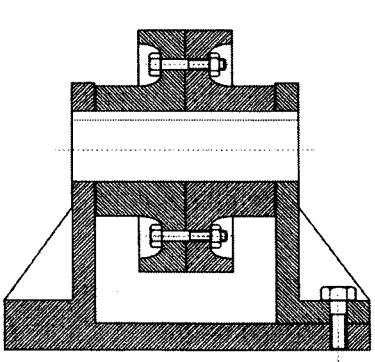
Sketch = 1 mark
Labelling = 2½ marks)
3½ marks)



10 Ms

Sketch = 1 mark
Labelling = 2½ marks)
3½ marks)

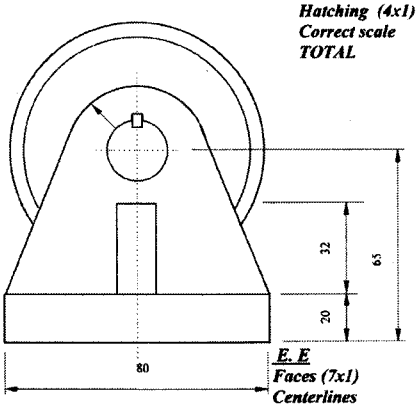
11.



SECTION A - A

SECTIONAL F. E

Faces (9x1)	*= 9*
Bolts and nuts	*= 3*
Hatching (4x1)	*= 4*
Correct scale	*= 1*
TOTAL	*= 17*



E. E

Faces (7x1)	*= 7*
Centerlines	*= 1*
Leading dimensions(4x1)	*= 4*
Direction B	*= 1*
TOTAL	*= 13*

Q12 (MS)

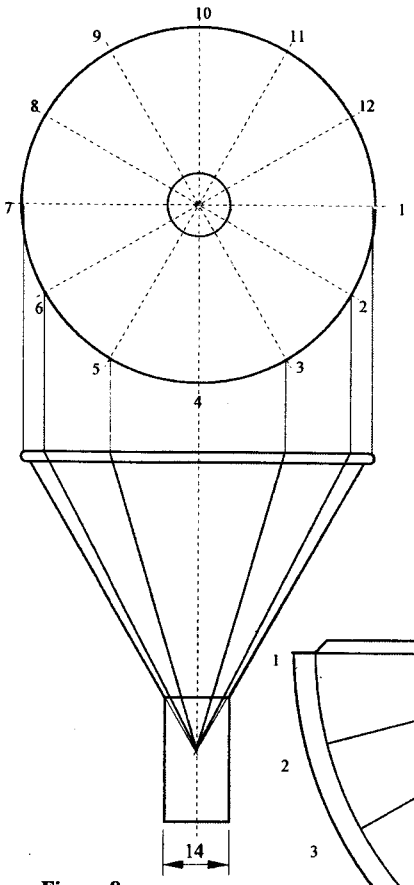
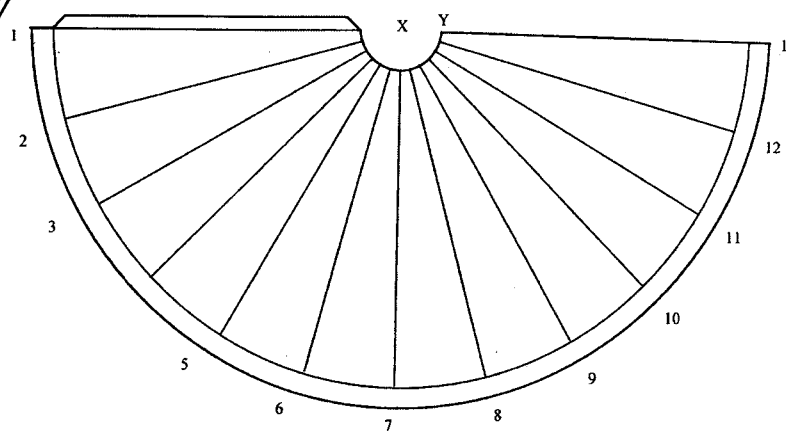


Figure 8

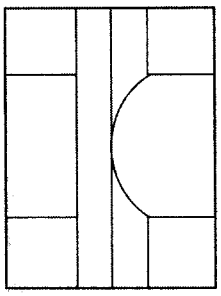
BODY	
Drawing the plan	*= 1/2*
Drawing the cone	*= 1*
Determination of height	*= 1*
Determination of circumference	*= 1*
Dividing the plan into 12 parts	*= 1*
Transfer of divisions	*= 1*
Height of truncated part	*= 1*
Drawing arc for spout opening	*= 2*
Provision of wire edge	*= 1*
Provision of flap	*= 1*
SPOUT	
Drawing the plan	*= ½*
Determination of circumference	*= 1*
Dividing the plan into 12 parts	*= 1*
Stepping the circumference	*= 1*
Determination of height	*= 1*
TOTAL	***= 15 MARKS***

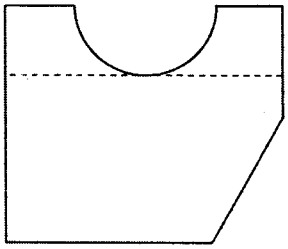


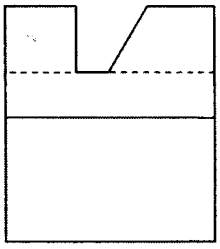
13.

Plan = 9 faces (9x½) = 4½
Curve = 1
Front = 2 faces (2x½) = 2
Elev. Connect groove = 1
Smooth curve = 1
End
Elevation = face (1 x1)= 1
Groove = 1
Hidden details = 1
Third angle
projection = 1
Scale = 1
Neatness = ½
15 marks

13 ms

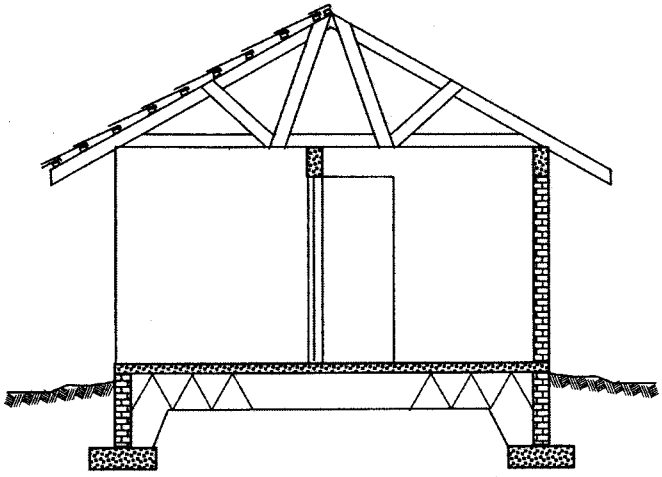






14.

Q14 (ms)

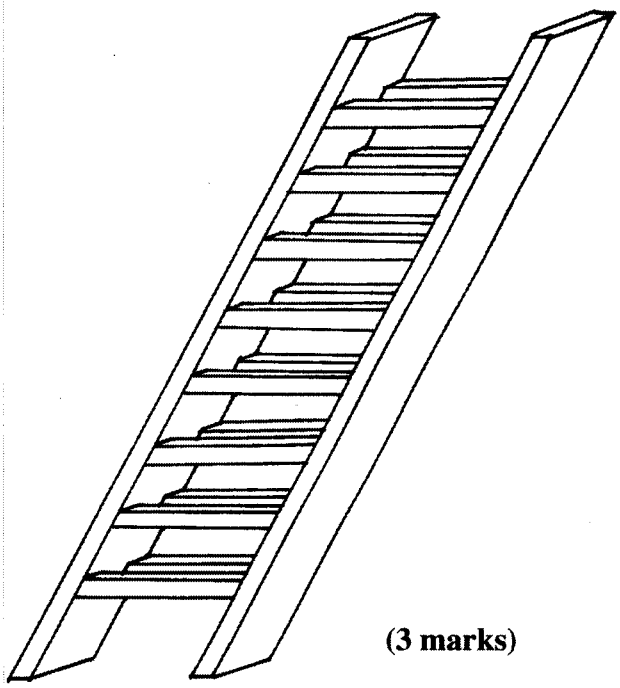


Tiles	***= 1***
Battens	***= 1***
Rafters	***= 1***
Ring beam	***= 1***
Wall	***= 1***
Concrete floor	***= 1***
Hard core	***= 1***
Foundation (2x1)	***= 2***
Ground level	***= 1***
Door opening (2x1)	***= 2***
Scale	
height	***= 1***
width	***= 1***
pitch	***= 1***

TOTAL ***= 15 MARKS***

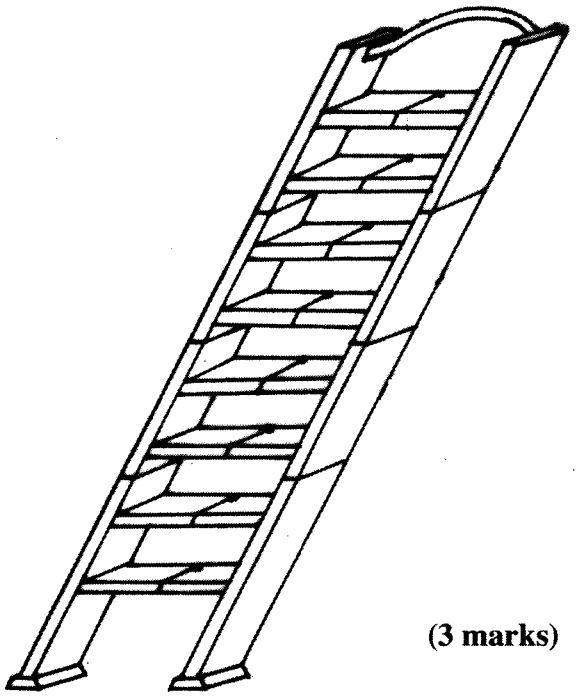
(2 x 1) = 2 marks

POSSIBLE DESIGN SKETCHES



(3 marks)

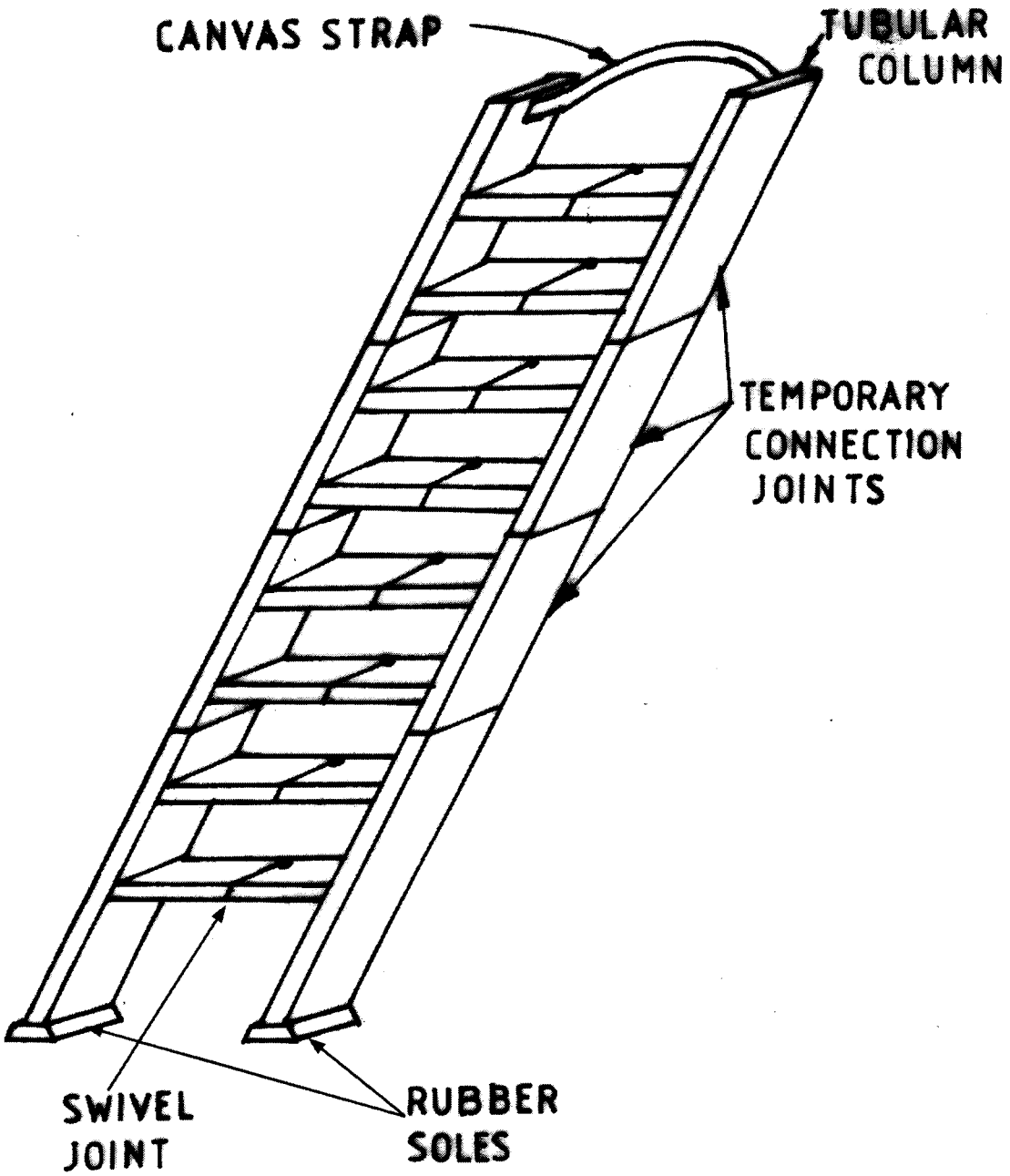
A



(3 marks)

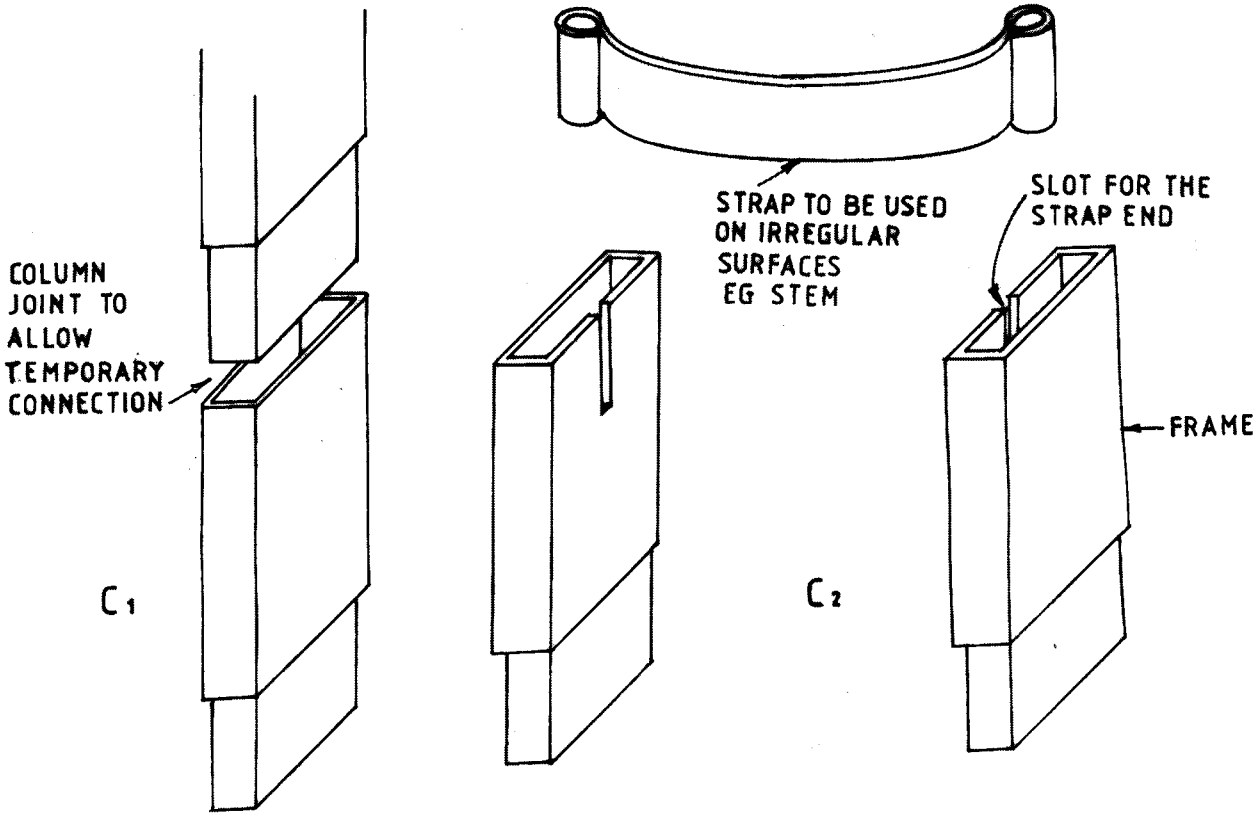
B

SUB-TOTAL = 6 MARKS



MARKING SCHEME

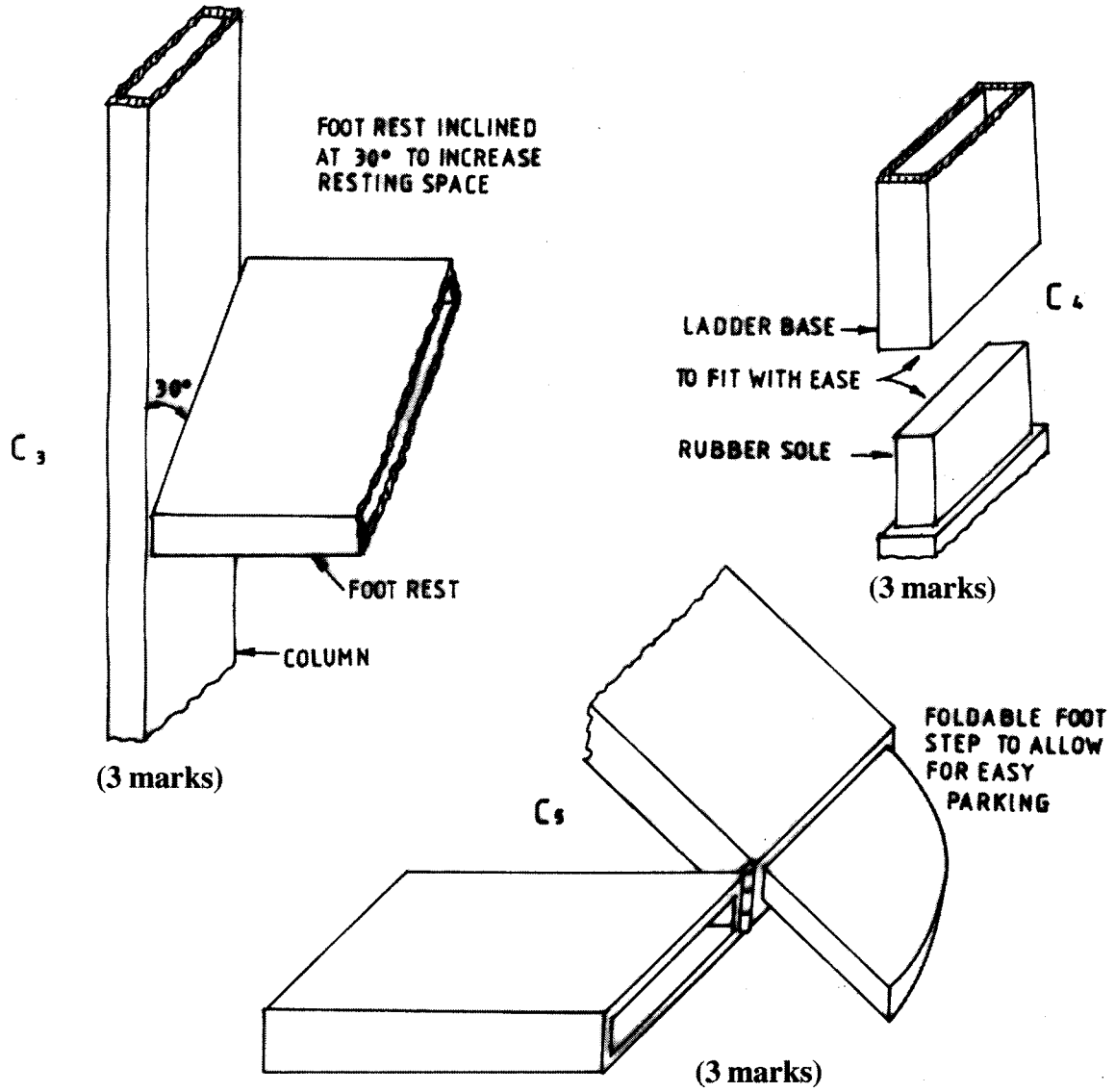
	DESCRIPTIONS	MARKS
1	Temporary connection for heights	3
2	Rubber soles for firm grip	2
3	Steps provision for climbing comfortably	2
4	Provision to using it on different tree trunks	2
5	Collapsibility for transportation	2
	SUB-TOTAL	**11**



(3 marks)

(3 marks)

SUB-TOTAL = 6 MARKS



D. MATERIALS USED:

(i) ALUMINIUM ALLOY IT IS LIGHT FOR EASE OF HANDLING AND IS STRONG ENOUGH (1 mark FOR THE FRAME (1 mark)

(ii) RUBBER FOR THE SOLE (1 mark) IT PROVIDES A FIRM GRIP ON THE GROUND (1 mark)

E. (i) WELDING (1 mark) TO ASSEMBLE THE FRAME WORK (1 mark)

(ii) RIVETTING (1 mark) TO RIVET THE PARTIAL PARTS OF THE FOOT STEP (1 mark)

SUB TOTAL = 17 MARKS

TOTAL = 40 MARKS