Shri Shankaracharya Institute of Professional Management & Technology, Raipur

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Roll No.:

3	0	3	3	0	2	2	2	0	0	2	0

Enrollment No.:

B	J	4	5	9	9

Course: B.Tech **Semester:** 2nd

Branch: COMPUTER SCIENCE AND ENGINEERING

Subject Name: ENGINEERING GRAPHICS AND DESIGN

Subject Code:

A	0	0	0	1	1	4	(	0	3	7	)

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Signature

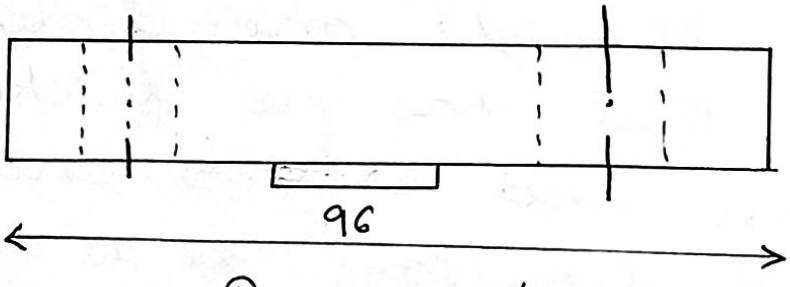
Unit - I

Q1>

Ans: Every drawing, whether a scale drawing or freshhand drawing, besides showing the true shape of an object, must supply its exact length, height, sizes and positions of holes, grooves etc. and such other details relating to the manufacture of that object.

There are Two types of dimensions needed on a drawing are:

(i) Sizes or functional dimensions &
(ii) Location or datum dimensions (shown by letters F and L respectively).



Dimension Line.

Dimensioning Terms and Notations:

1.) **Dimension Line:** Dimension line is a thin line. It is terminated by arrowheads touching the outlines, extension lines or centre lines.

2.) **Extension Line:** An extension line is also a thin continuous line drawn in extension of an outline.

3.) **Arrowhead:** An arrowhead is placed at each end of a dimension line.

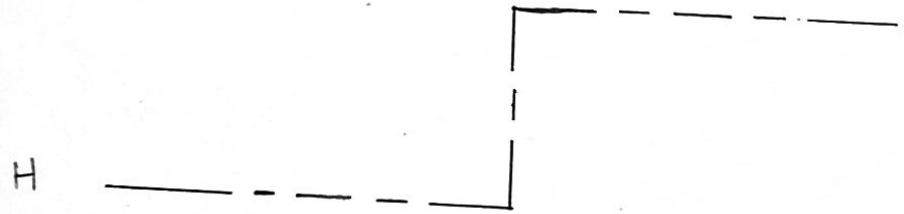
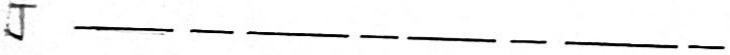
4.) **Leader:** A leader or a pointer is a thin continuous line connecting a note or a dimension figure with the feature to which it applies.

Q3>

Ans → In geometry, a **line** can be defined as a straight one-dimensional figure that has no thickness no thickness and extends endlessly in both directions. It is ~~ob~~ often described as the shortest distance between any two points.

Description of Lines

Line	Description	General application
A 	continuous thick	Visible outlines
B 	continuous thin (straight or curved)	Imaginary lines of interact^{n} Dimension lines. Projection lines. Leader lines. Hatching. ~~lines~~ Outlines of revolved sections in place short centre lines.
C 	continuous thin ~~freehold~~. . freehand.	Limits of partial or interrupted sections if the limit is not a chain thin line.
D 	continuous thin (straight) with zigzags	Long-break line.

E 	Dashed thick.	Hidden outlines. Hidden edges.
G 	chain thin	centre line Line of symmetry Trajectories.
H 	chain thin, thick at ends and changes of direction	cutting planes.
J 	chain thick.	Indication of lines or surfaces to which a special requirements applies.
	chain thin doubled - dashed	outlines of adjacent parts alternative and extreme.

Q4>

Sol^n → $R.F. = \frac{3.2\ cm}{4 \times 100\ cm} = \frac{1}{125}$

Max Length = 25m.

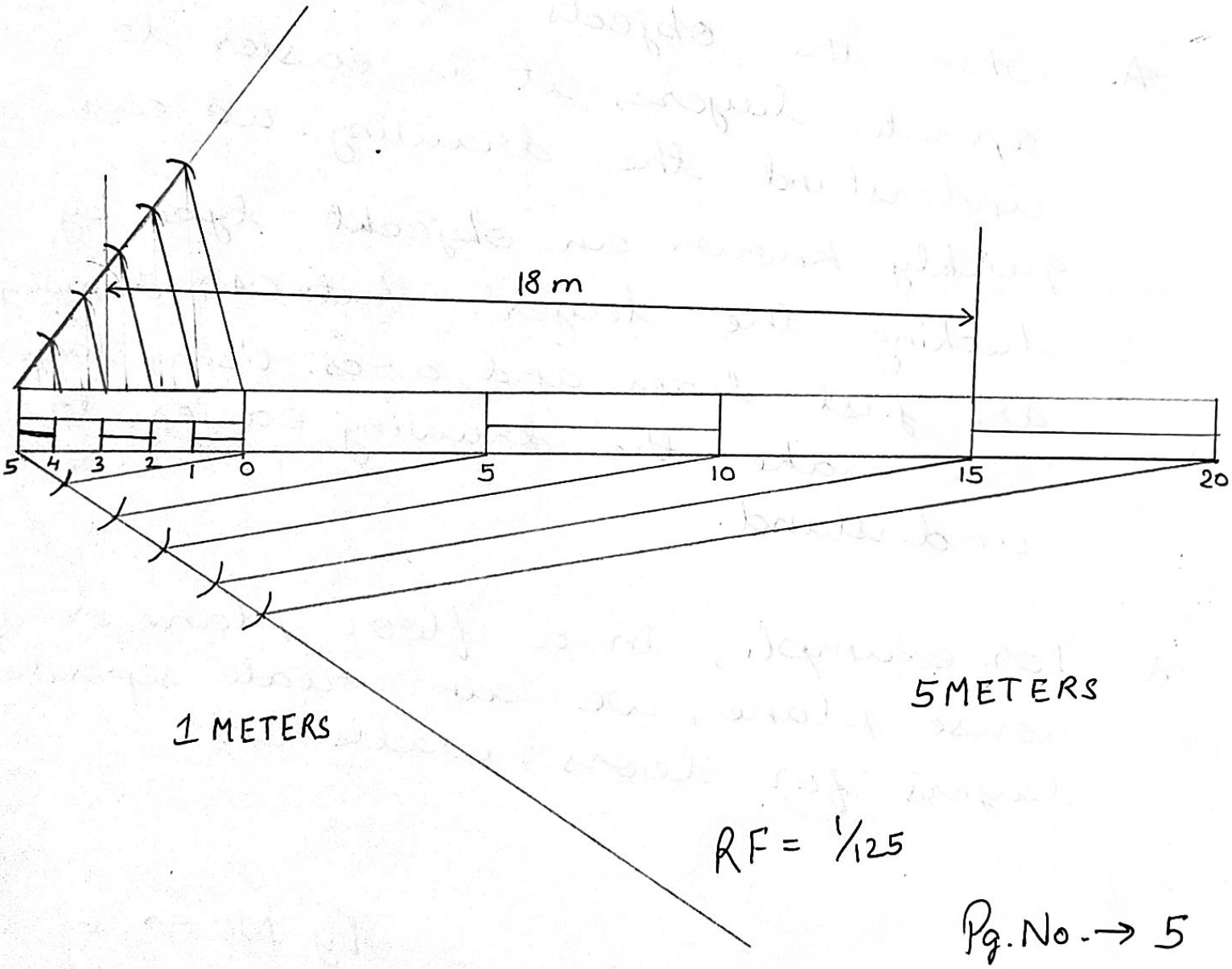
Length = 25 m

Length of scale = Max Length × R.F.

$= 25 \times \frac{1}{125} \times 100 = 20\ cm.$

Scale is Divided into ~~Sports~~ 5 parts,

$\Rightarrow n = 5$



RF = 1/125

Unit - II

Q1>

Ans → ★ Layers are primary method for organising the objects in a drawing by function or purpose.

★ Layers can resolve visual complementary of a drawing and improve ~~dit~~ display performance by ~~holding~~ hiding information that you don't need to see at that moment.

★ when the objects are drawn in seperate layers, it is easier to understand the drawing. We can quickly known an object type by checking the layer. AutoCAD drawing are just lines and arcs. Using layers can make the drawing easier to understand.

★ For example, in a floor plane or house plane, we can create seperate layers for doors, walls etc.

Q2>

Ans→ Computer aided drawing / Drafting is a process of preparing a drawing of an object on the screen of a computer.

There are various types of drawings required in different fields of engineering and science.

* In the field of civil engineering, plans and layouts of buildings are prepared.

* In all other fields of engineering use of computer is made for drawing and drafting.

The use of CAD process provides designer to:

* Conceptualize his ideas.
* Modify the design very easily.
* perform animations.
* Make design calculations.
* Use colours, fonts and other aesthetic features.

Benefits of CAD:

- ★ Improved productivity in drafting.
- ★ Shorter preparation time for drawing.
- ★ Reduced man-power requirement.
- ★ Customer modifications in drawing are easier.
- ★ More efficient operations in drafting.
- ★ Low wastage in drawing.

Limitations of CAD:

- ★ It requires large amount of computer memory.
- ★ The size of the software package is large.
- ★ Skill manpower is required to prepare the drawing.
- ★ Huge investment.
- ★ Heavy dependency.

Q3>

Ans → Command LINE (↵)

Specify first point : 20,20 (↵)

Specify next point or [undo] : @ 80<0 (↵)

Specify next point or [undo] : @ 30<90 (↵)

Specify next point or [~~cot~~ close/undo] : @10<180 (↵)

Specify next point or [close/undo] : @ 15<108 (↵)

Specify next point or [close/undo] : @ 10<180 (↵)

Specify next point or [close/undo] : @ 15<252 (↵)

Specify next point or [close/undo] : @ 20<180 (↵)

Specify next point or [close/undo] : @ 14.27<90 (↵)

Specify next point or [close/undo] : @ 20<180 (↵)

Specify next point or [close/undo] : @ 14.27<270 (↵)

Specify next point or [close/undo] : @ 10.73<180 (↵)

Specify next point or [close/undo] : C (↵).