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Subject : computer Aided Building Modeling and Design.

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Q No 1

Ans (a) **Application of Auto Cad:**

There is virtually no limit to the kinds of line drawing using Auto Cad. If a drawing can be created by hand, it can be generated by Auto Cad. Here are the few of Application of the Auto Cad.

- ★ Architectural drawing of all kinds.
- ★ Interior design and facility planning.
- ★ Work flow chart and organizational diagram
- ★ Proposal and presentations.
- ★ Graphs of all kinds.
- ★ Drawing for electronics, chemical, civil, mechanical, automotive and aerospace engineering applications.
- ★ Topographic map and charts.
- ★ Yacht design.
- ★ Plots and other representation of mathematical and Scientific function
- ★ Theater set - lighting design.
- ★ Musical Scores
- ★ Company logos
- ★ Greeting Cards
- ★ Line drawing for the fine art.

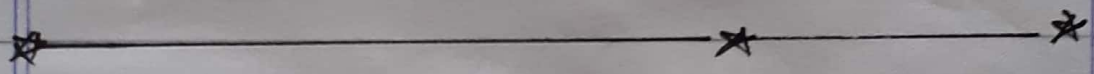
Why Auto cad prefferred over Manual drawing.

- ★ Auto Cad is significantly faster than the tradional method of manual Drafting.
- ★ It accelerates the task of preparing

a bill, reports, scalling, etc of content. tedious work of drawing each line on paper done in a few mouse clicks.

As CAD Software removes repeated iterations, large amounts of time are saved.

In Autocad., data describing a component is associative and hence revisions are automatically made to all places the data is used.



Q.No 1

Ans(b) Graphical User Interface:

The Graphical User Interface (GUI) of AutoCad Contains the Quick Access Toolbar, Title Bar, Ribbon, Status Bar, UCS icon, application menue work space. etc.

(1) Application Menu:

The application menu Contains basic Commands pertaining to the drawing as a whole, Such as open, Save, print and Export.

(2) Quick Access Tool Bar:

It is customizable area of the interface where you can add your favourite or frequently used Command.

(3) Title Bar:

Contain the title of the project and the version of AutoCad used.

(4) Ribbon:

It is below the title bar. The menu and tool bar have been replaced with the ribbon, which helps you to find the Commands quickly.

(5) Drawing Area:

It Cover maximum space on the interface. All drawing are drawn in this area.

(6) Command Bar:

It is a place where you Can type in Commands and view

history of the commands.

(7) View Cube:

It is the upper right, from which you can change the view and UCS. Just below that is the NavBar that gives you controls for zooming, planning, orbiting and move.

(8) UCS Icon:

User Co-ordinate System is the lower left hand corner which tell you the general orientation. UCS helps to orientate the drawing with respect to the current Co-ordinate system and in particular, to know where the Co-ordinate system orgin is located.

(9) Status Bar:

The status bar displays some important detail like the scedulling mode of new tasks.

★ ★ ★

QNo2

Ans:

Command	Description	option
1. Line 	Used to draw straight line, between two specified points.	★ At Command Line type L and press enter. ★ On the ribbon, click on the line icon. Any of the above option can be used to draw a line. AUTOCAD will ask you to specify the first point, click on the point and move the mouse Autocad will now ask "specify the next point or (undo)". Respond by clicking at another point. Autocad will keep asking "specify the next point ~~point~~ or (undo)". until you finish the Command by pressing Enter.

2. Arc. 	Draws an arc. The default method of drawing arcs is Selecting three points (So called "3-point arc"), which are the two end points of the arc and some other point along its locus. Other methods of drawing an arc can be specified by three letters, Such as SEA, (Which means "start point, End point and included angle.	★ An Included angle. ★ "C" center point of arc. ★ "D" Direction angle of a line tangent to the arc. ★ E Endpoint of arc. ★ "L" length of chord passing through both end points of the arc. ★ "R" Radius. ★ "S" start point of arc.
3. Circle. 	Draw a Circle of any size. The default method is to pick a Centre point and pick a point on the radius or type the Radius dimension, but other methods Can be Selected.	★ 2P Specifies circle by picking 2 points on the diameter. ★ 3P Specifies Circle by picking 3 points through which the circle Through pass. ★ D Allows entering the diameter dimension instead of Radius dimension. ★ TTR specifies Circle by picking two lines, arcs or

			Circles for the Circles to be tangent to, and entering the dimension of the radius. * <RET> Enter radius of circle.
	4. Pedit	Allow editing of polylines which are already drawn	"C" closes an open polylines. "D" curves, or return to its control frame or series of connected straight line. E edit vertices. F fits curve to a polyline - makes a series of straight line into a curve which will pass through the vertices "J" Joints a line or arcs or another polyline to an open polyline. "L" Toggles line type generation to be either a continuous pattern of dashes passing through the vertices or a pattern which starts and ends at each vertex.

			"O" opens a closed polyline. "S" uses the polyline vertices as a frame for Spline Curve - type of Spline Curve is set by the variable "Spline type."
	5. Osnap 	Enables points to be precisely located on reference points of existing object. This called "Running Mode." If Osnap which set selection method to run continuously until set to NONE (none) or until overriden by selecting another "interrupt Mode". OSNAP methods can be used by selecting a series of options separated by Commas. For instance, If you want of always pick either end point or intersection points when locating end points of lines OSNAP<RET>END, INT <RET>.	CEN. Centre of arc or circles. END End point of arc or lines INS insertition point of Text or Block. MID. Mid point of line, arce, Rectangle side. NEA. Nearest point selected by aperature on line, polyline, arc or circle. NOD Node (another name for point) NON None - used when a "Running OSNap" is on to temporarily turn off OSNAP.

6- Stretch. 	Allows a moving a portion of drawing while retaining their Connection to other parts of the drawing you cannot stretch Blocks, Hatch patterns or Text entities, however.	★ Allows lengthening or Shorten object. ★ Crossing windows or polygon must cross the object you want to stretch. ★ Any object lies Completely with in the selection window is moved ★ you need to enter the base point and amount of stretch.

Q(3)

Part(a) Special Feature in Auto CAD.

Layers~:

An AutoCAD drawing can be construced over Serveral layers. A layers. A layer is like transpervent Sheet of paper which holds drawing objects.

★ Line::

The default line type in AutoCAD is continous. everything you draw is shown with a continous line type. To draw with a dashed or dotted (or other) line type you need to look in the fulo libraries of line types supplied

★ DIMENSION TOOLS.

in many application. a percise drawing plotted to a Scale is not sufficent to convey the desired information must be added showing the lengths of objects or the distance or the angle b/w objects.

★ DIMENSION LINE::

It is a line with arrows at the end which represents the extent of given dimension

* **ARROWS~:**
The Symbol at The end of The dimison Line may very with The individuals preference.

* **EXTENSION LINE~:**
Generally dimension are drown a little away from measured objects

* **DIMENSION TEXT~:**
This is a text that specifies The actual measurement. the defult text string accompaines The dimesion is The one computed automatically by AutoCAD.

* **LEADER~:**
Sometime The dimesion text may be moved a suitable place since it does not fit near The object.

* **BLOCKS~:**
A block is a collection of objects That are combind into a single named object.

* **DYNAMIC BLOCKS~:**
Dynamic block contain rules or parametters for show how to change The appearence of The block reference when it is drawing.

SETTING UP NEW LAYER :-

To create a new layer. first issue The layer command.
command line: layer : menu
format :- Layer.

(1) in The Layer properities manger dialogue box, click on new. controls which layers are displayed in The list here.

(2) Type in a layer named "walls" and press enter. The wall layer is now in place, click on Show details to See its properities.

3) Try creating a new layer called "fitting"

ASSIGNING COLOUR TO LAYER :-

Assiging a colour to a layer That everything drawn on That layer will take on That colour.
(1) click on The colour box in The colour column.
2) click on The colour red for The walls layer in The Select colour dialoge box. click on it
3) Assign The colour green to The layer fitting.

* MAKING LAYERS VISIBLE OR IN VISIBLE ~:

AutoCAD allows You to Switch a layer "off" (invisible) or "on" (visible)

complex drawing may become cluttered which can make it difficult to Select object for editing or drawing. The clutter may be reduced by making a layer invisible if you are not working on it. when a layer is made visible The objects drown on it disappeur from The Screen. but They Still exist and part of The drawing. layer which are invisible are not printed This has The advantages of allowing you to print Selected layer of The drawing:::

Q3

Ans(6) **XREF:**

In AutoCad, an XREF, or external reference, is a reference to another, external file. One outside the current drawing that you can make act as though it's part of your drowing.

Uses of XREF:

* You can Co-ordinate your work with the work of others by referencing other drawings in yours drawings to keep up with the changes being made by other designers. You can also assemble a master drawing from components drawings that may undergo changes as a project develops.
* Ensure that the most recent version of the referenced drawing is displayed. when you open your drawing, each referenced drawing is automatically reloaded, so it reflects the latest state of the referenced drawing file.
* Keep the names of layers, dimensioning styles, text styles and other named element in your drawing separate from those in referenced drawing.
* You can Merge attached referenced drawing permenently with your current drawing when the project is complete and ready to be archived.