



**School of Woodworking Skills  
Session: 2021-22 (Summer Semester)  
B. Voc. Program, 3<sup>rd</sup> Semester,  
End-Sem. Examination**

**Course Code: GEN1309**

**Time: 3 Hours**

**Course Name: Woodworking CAD**

**Max. Marks: 50**

**Instruction:**

1. Answer all questions from section A, each question carries one mark.
2. Answer all questions from section B, each question carries five marks.
3. Answer all questions from section C, each question carries ten marks.

**Section – A**

05X01 = 05 Marks

Q.1 Which plane is used to draw the entities in AutoCAD, by default?

- (a) XY (b) YZ  
(c) ZX (d) XYZ

Q.2 When drawing in 2D, what axis do you not work with?

- (a) X (b) Y  
(c) Z (d) WCS

Q.3 Which one symbol shows the snap point to the closest point?

- (a) with circles and dots in the center (b) With two triangle  
(c) With three orthogonal (d) With Diamond

Q.4 What is the difference between command Plot and Print?

- (a) plot command prints only big plans  
(b) No difference  
(c) The plot command for CNC  
(d) Print command can print up to A3 size paper

Q.5 What is the primary difference between the Model tab and the Layout tab is \_\_\_\_?

- (a) the Model tab is used for drawing in 3D and a Layout is used for drawing in 2D  
(b) the color of the background  
(c) the Model tab is where you create the drawing and a Layout tab represents the sheet that you will plot or print on  
(d) the Model tab displays the drawing you are copying from and the Layout tab is where you lay out the new drawing



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## Section – B

03X05 = 15 Marks

Q.6 Explain any four difference between basic hand drawing and AutoCAD drawing and discuss how drawing is useful in improving product quality.

Q.7 Explain six types of lines with sketch and also describe their applications.

Q.8 Describe the following tools and also mention their short key being used in AutoCAD.

(a) Scale      (b) Stretch      (c) Offset      (d) Join      (e) Break

## Section – C

03X10 = 30 Marks

Q.09 Draw all possible views required and show details of an Open Cabinet with following aspects-

- a) Length – 500
- b) Depth – 421
- c) Height – 820
- d) Board material thickness – 17 mm & 8 mm (back wall)
- e) Follow 32 hole drilling system for shelves
- f) 2 shelves inside cabinet
- g) Shelves depth is 10 mm short (less) from front edge of side wall
- h) Back wall placement from back edge should be 12 mm
- i) 8 mm groove in sides for back wall fixing
- j) Diameter of drills is 5 mm & depth 12 mm.

Q.10 Generate part list and final drawing output file of drawn objects (Refer to question 09).

Q.11 Draw all possible views of corner bridle joint with 200x60x24 mm dimensions for both arms.



**Set – B**

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**Section – A**

05X01 = 05 Marks

Q.1 Which plane is used to draw the entities in AutoCAD, by default?

- (a) XY (b) YZ  
(c) ZX (d) XYZ (a)

Q.2 When drawing in 2D, what axis do you not work with?

- (a) X (b) Y  
(c) Z (d) WCS (c)

Q.3 Which one symbol shows the snap point to the closest point?

- (a) with circles and dots in the center (b) With two triangle  
(c) With three orthogonal (d) With Diamond (c)

Q.4 What is the difference between command Plot and Print?

- (a) plot command prints only big plans  
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(d) Print command can print up to A3 size paper (b)

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(c) the Model tab is where you create the drawing and a Layout tab represents the sheet that you will plot or print on  
(d) the Model tab displays the drawing you are copying from and the Layout tab is where you lay out the new drawing (c)

Q.6 Explain any four difference between basic hand drawing and AutoCAD drawing and discuss how drawing is useful in improving product quality.

**Ans.**

S. No.	Basic Hand Drawing	Auto Cad Drawing
1	It is truly made by hand on paper.	We can draw in software computer
2	It has to be store manually cause of hard copy	It has to be store in computer memory
3	More time consuming to draw on paper	Less time consuming cause of electronic medium
4	Correction in drawing is too tough	Correction in drawing is too easy
5	All things have to draw, no any predefined library as AutoCAD	We can access predefined library of AutoCAD

It is true that quality of product is related to drawing because of the assembly and connections of joints are totally based on the drawing and this is so important to get qualitative product drawing has to be realistic and qualitative.





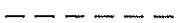


Importance of drawing in product quality -

1. To know visualization of product in 2D & 3D
2. In assembly of joints
3. Product reality
4. Product quality
5. To check error in product.

Q.7 Explain six types of lines with sketch and also describe their applications.

**Ans.**

CONVENTIONS FOR VARIOUS LINES [ACCORDING TO B.I.S. S.P : 46 - 1988]

LINE	DESCRIPTION	GENERAL APPLICATION
A 	CONTINUOUS THICK	A1 VISIBLE OUTLINE A2 VISIBLE EDGES
B 	CONTINUOUS THIN STRAIGHT OR CURVED	B1 IMAGINARY LINES OF INTERSECTION B2 DIMENSION LINES B3 PROJECTION LINES B4 LEADER LINES B5 HATCHING B6 OUTLINES OF REVOLVED SECTIONS IN PLACE B7 SHORT CENTRE LINE
C 	CONTINUOUS THIN FREEHAND	C1 LIMITS OF PARTIAL OR INTERRUPTED VIEWS AND SECTIONS, IF THE LIMIT IS NOT A CHAIN THIN
D 	CONTINUOUS THIN (STRAIGHT WITH ZIGZAGS)	D1 LINE
E 	DASHED THICK	E1 HIDDEN OUTLINES E2 HIDDEN EDGES
F 	DASHED THIN	F1 HIDDEN OUTLINES F1 HIDDEN EDGES
G 	CHAIN THIN	G1 CENTRE LINES G2 LINES OF SYMMETRY G3 TRAJECTORIES

Q.8 Describe the following tools and also mention their short key being used in AutoCAD.

- (a) Scale      (b) Stretch      (c) Offset      (d) Join      (e) Break

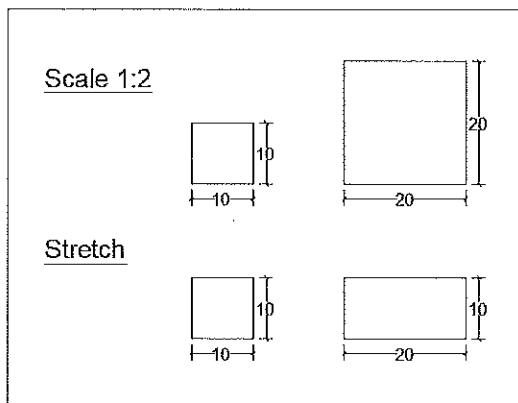
**Ans.**

**(a) Scale** - Used for either reducing or increasing the actual size of the selected object by a specified scale. A scale factor represents the ratio of two corresponding lengths in similar geometric shapes.

Short key - SC + Enter

**(b) Stretch** - Used to lengthen object, shorten them and to alter their shapes by a selection window. This moves only the vertices and endpoints that lie inside the crossing selection. Stretch does not modify 3D Solids.

Short key - S + Enter



**(c) Offset** - Used to create concentric circle, parallel lines, and parallel curves at a specified distance. You can offset an object at a specified distance or through a point. After you offset



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objects, you can trim and extend them as an efficient method to create drawings containing many parallel lines and curves. The OFFSET command repeats for convenience.

Short key - O + Enter

**(d) Join** - Used to join the end points of linear objects and curved objects. Combines a series of finite linear and open curved objects at their common endpoints to create a single 2D entity.

Short key - J + Enter

**(e) Break** - Used to erase the part of an object. It breaks the selected object between two points. You can create a gap between two specified points on an object, breaking it into two objects. BREAK is often used to create space for a block or text.

Short key - BR + Enter

**(f) Explode** – Explodes a compound object when you want to modify its component separately i.e. used for explode/brake a unit object to modify its component separately. Objects that can be exploded includes, polylines, blocks etc.

Short key - X + Enter

### Section – C

03X10 = 30 Marks

Q.09 Draw all possible views required and show details of an Open Cabinet with following aspects-

- a) Length – 500
- b) Depth – 421
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- d) Board material thickness – 17 mm & 8 mm (back wall)
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- j) Diameter of drills is 5 mm & depth 12 mm.

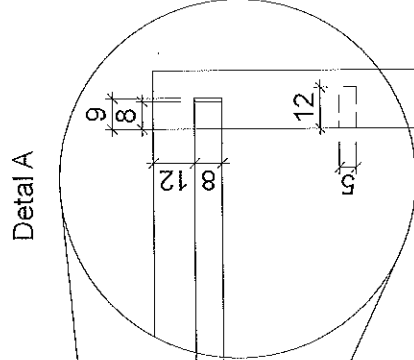
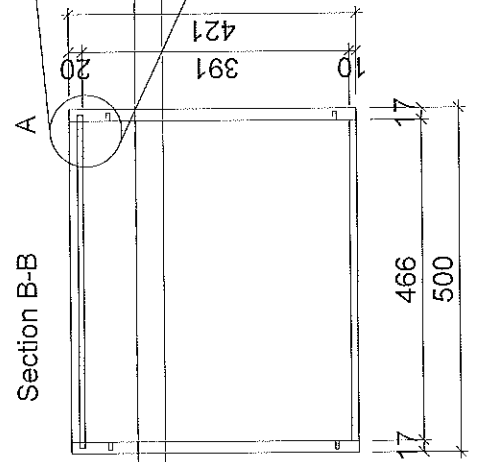
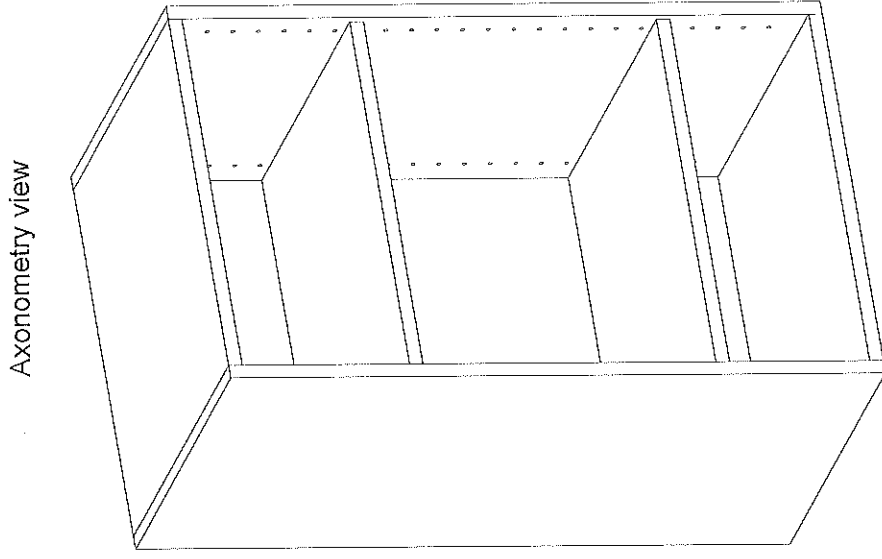
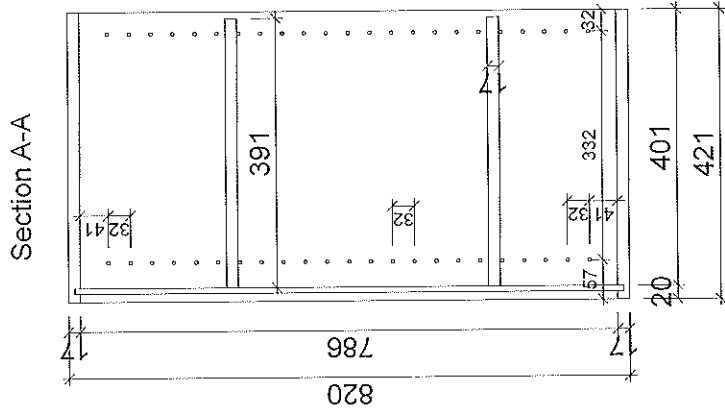
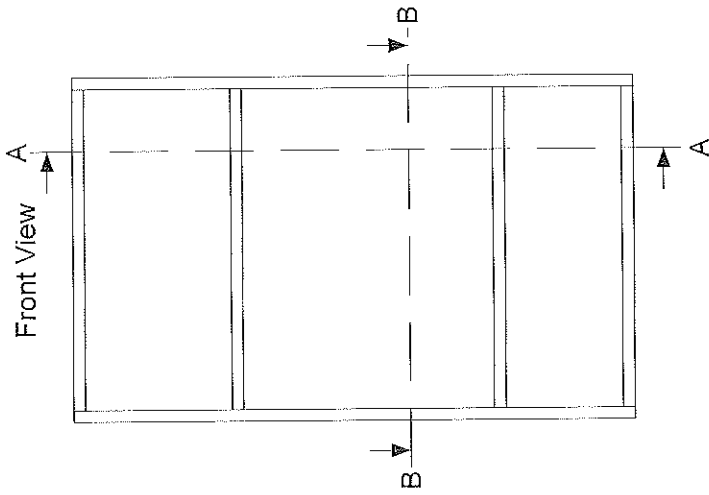
**Ans.** Refer Attachment 01

Q.10 Generate part list and final drawing output file of drawn objects (Refer to question 09).

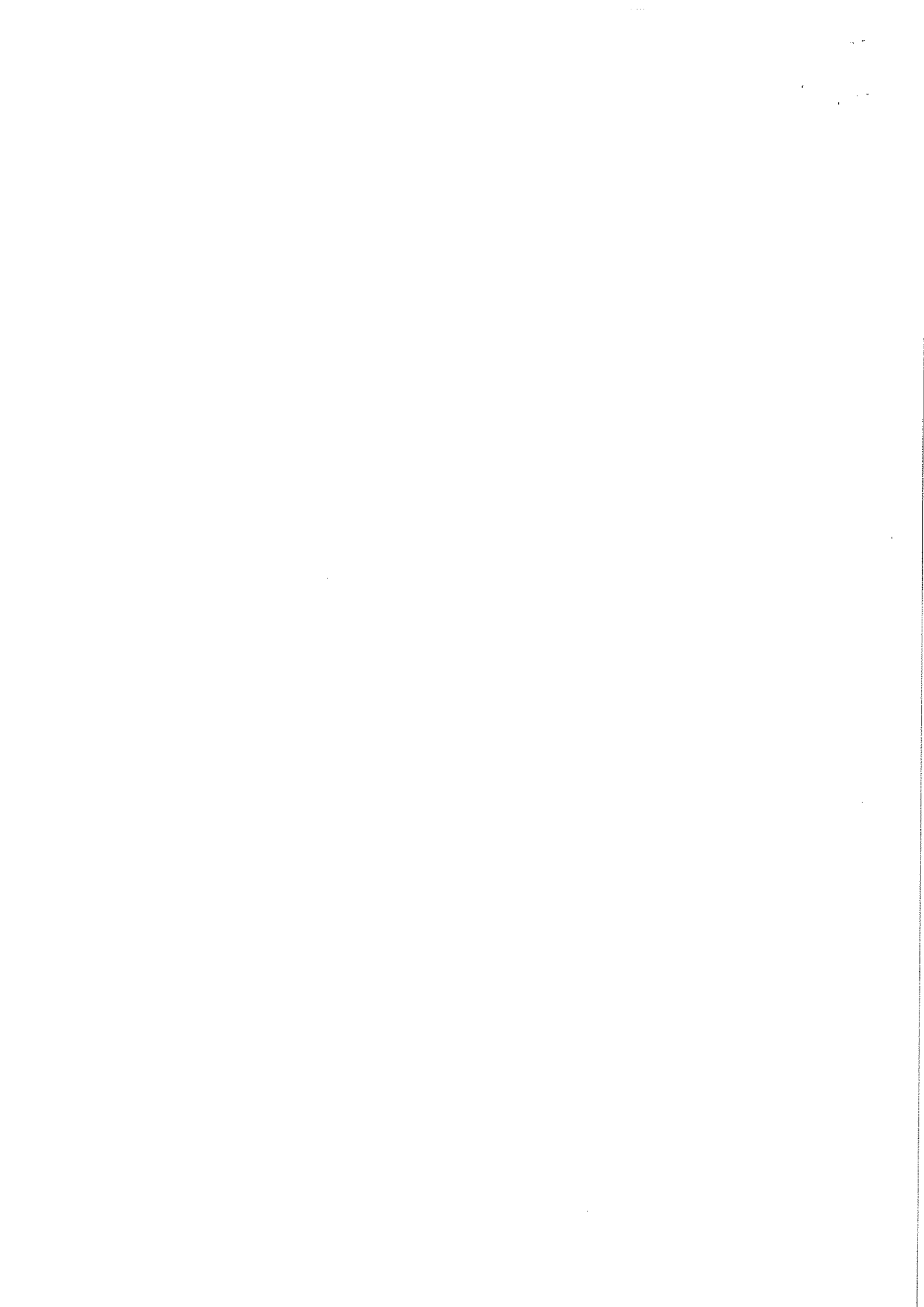
**Ans.** Refer Attachment 02

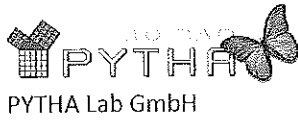
Q.11 Draw all possible views of corner bridle joint with 200x60x24 mm dimensions for both arms.

**Ans.** Refer Attachment 03



Name : XXXXX XXXXXX  
 Reg. No. : xxxxxxxxxxxx  
 Semester : V Sem.  
 Title : Open Cabinet  
 Scale : 1:10 / 1:2  
 Subject : CAD 3D Drawing  
 Sub. Code : SCS1506  
 Date : Xx/xx/xxxx  
 School : School of Woodworking Skills





Project : Open Cabinet

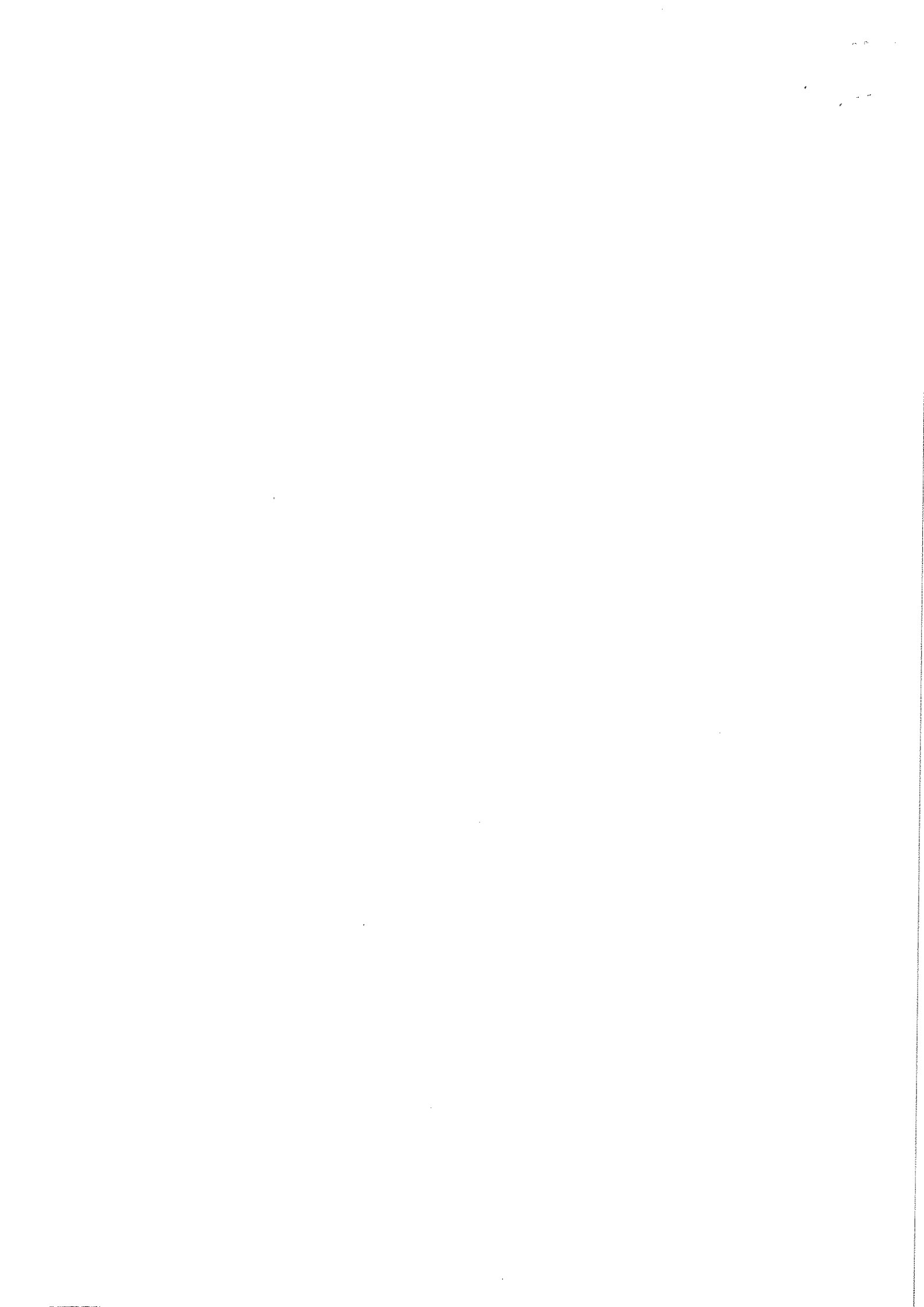
Customer : School of Woodworking Skills

### Part List

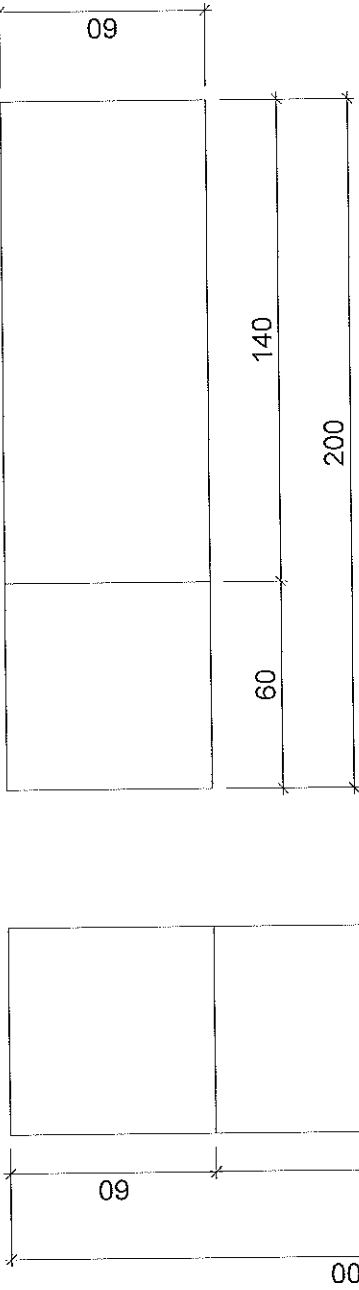
<i>Qty.</i>	<i>Name (tree)</i>	<i>Length</i>	<i>Width</i>	<i>Thickness</i>
1	Back Panel	802.0	482.0	8.0
1	Bottom	466.0	421.0	17.0
1	Shelf 1	466.0	391.0	17.0
1	Shelf 2	466.0	391.0	17.0
1	Side - Left	820.0	421.0	17.0
1	Side - Right	820.0	421.0	17.0
1	Top	466.0	421.0	17.0

Submitted By -

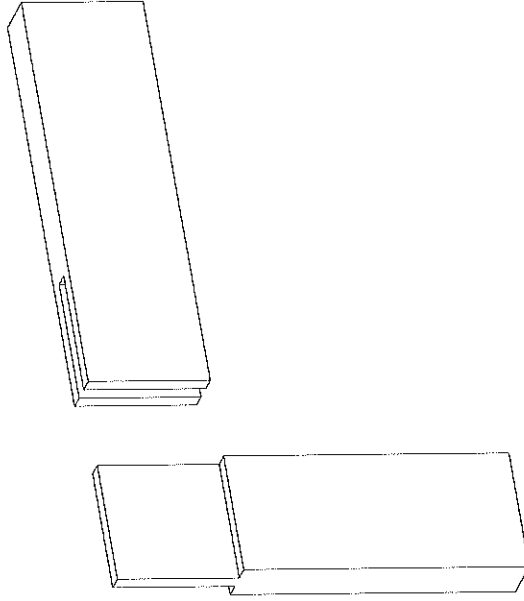
Name : XXXXX XXXXXX  
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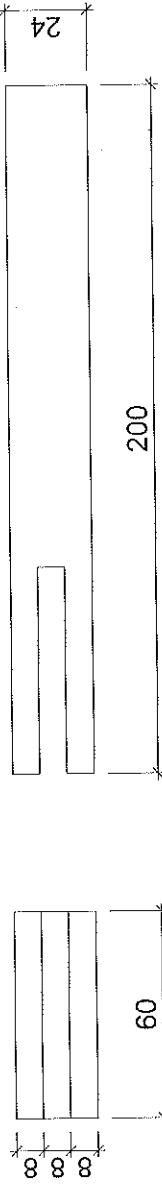
Front View



Axonometry view



Top View



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Reg. No. : xxxxxxxxxxxxxx  
Semester : V Sem.  
Title : Open Cabinet  
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Set – A

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Course Name: Woodworking CAD

Max. Marks: 50

**Instruction:**

1. Answer all questions from section A, each question carries one mark.
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**Section – A**

05X01 = 05 Marks

Q.1 Which axis is used to show depth in AutoCAD?

- (a) X (b) Y  
(c) Z (d) WCS (c)

Q.2 What is the minimum allowable number of layers in a drawing?

- (a) 0 (b) 5  
(c) 1 (d) 2 (c)

Q.3 Which of the following is not a property of an object?

- (a) Line weight (b) Measure  
(c) Hyperlink (d) Elevation (b)

Q.4 What you cannot create from the Offset command?

- (a) Vertical straight (b) Concentric circles  
(c) Three parallel lines (d) Parallel arcs (a)

Q.5 What is the difference between the Scale command from the command Zoom

- (a) Scale for single object, while the Zoom whole plan  
(b) No difference  
(c) Scale can grow / shrink a shape up 10 times, while the Zoom has no limits  
(d) Scale changes the size of objects, while Zoom changes the visibility of the project (d)

**Section – B**

03X05 = 15 Marks

Q.6 Define layers, necessity of layers and how can you remove the empty layers from drawing?

**Ans.** Layer is a concept that allow grouping of drawn geometry in separate categories according to similar features and a common theme. This allows control over drawing, by applying properties to the layers such as line type, line weight & colors etc.

## Necessity –

- When a new AutoCAD drawing is created, everything which is drawn, is drawn on the one default layer, named 0. When creating drawings, the layer 0 shouldn't really be used.
- New layers should be set up with names corresponding to the desired properties.
- A user is entitled to create as many numbers of layers he requires in CAD software.
- Each layer can be defined to have its own line weight, line type, colour that is to be printed in the hard copy from drawing.
- Each layer created can be independently switched on and off in order to have a better visibility of the drawing and we can lock them to prevent editing.

**Removal of empty Layers -** We can delete only unreferenced layers. Referenced layers include layers 0 and defpoints. If you are working with a layer or you have some entity in drawing with same layer, that layer will not delete by anyway. For tht you have to remove that layer from all objects and also that was not current layer, then only you can delete that layer.

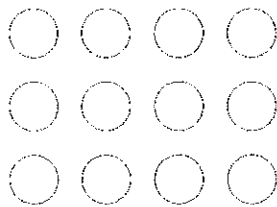
Q.7 Define Array with its short key and explain its types with neat sketch.

**Ans.** Array is the collection of similar object. Array creates copies of objects in a arranged pattern.

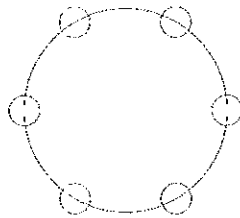
Short key - (AR + Enter)

Types of Array as follow-

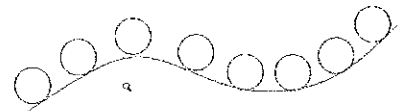
1. Rectangular Array – Evenly distributes object copies into any combination of rows, columns.
2. Polar Array – Evenly distributes object copies in a circular pattern around a center point.
3. Path Array - Evenly distributes object copies along a path



Rectangular Array



Polar Array



Path Array

Q.8 Explain the following tools and also mention their short key being used in AutoCAD.

(a) Explode (b) Extend (c) Polygon (d) Hatch (e) Offset

**Ans.**



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(a) **Explode** – Explodes a compound object when you want to modify its component separately i.e. used for explode/break a unit object to modify its component separately. Objects that can be exploded includes, polylines, blocks etc.

Short key - X + Enter

(b) **Extend** – Extend command allows to increase the length of an object within the limits of defined object. This can be used to extend a part of an object with respect to a boundary edge. Boundary edge can be any line, polyline, circle, arc, ellipse or any reference line.

Short key - EX + Enter

(c) **Polygon** – A polygon is bounded by close path with a finite sequence of straight line segments as chain. Used to draw any regular polygon (Closed chain of defined edges/sides) from 3 sides to 1024 sides.

Short key - POL + Enter

(d) **Hatch** – Repetitive patterns called hatching to fill regions in a drawing for various purpose. In general, used to show of object cutting view by a plane in 2D by different patterns.

Short key - H + Enter

(e) **Offset** - Used to create concentric circle, parallel lines, and parallel curves at a specified distance. You can offset an object at a specified distance or through a point. After you offset objects, you can trim and extend them as an efficient method.

Short key - O + Enter

### Section – C

03X10 = 30 Marks

Q.09 Draw all possible views required and show details of an Open Cabinet with following aspects-

- a) Length – 500
- b) Depth – 421
- c) Height – 820
- d) Board material thickness – 17 mm & 8 mm (back wall)
- e) Follow 32 hole drilling system for shelves
- f) 2 shelves inside cabinet
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- h) Back wall placement from back edge should be 12 mm
- i) 8 mm groove in sides for back wall fixing
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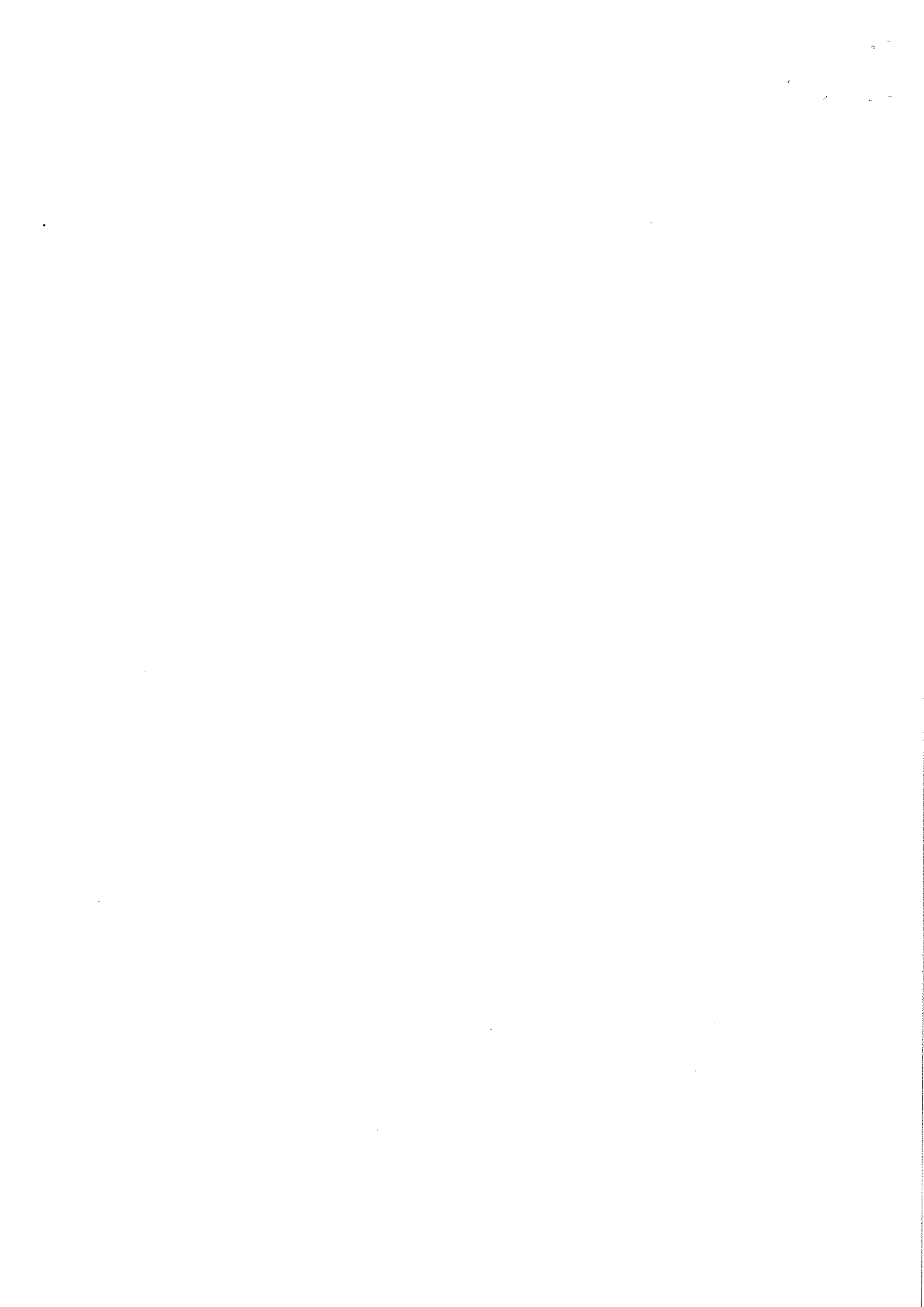
**Ans.** Refer Attachment 01

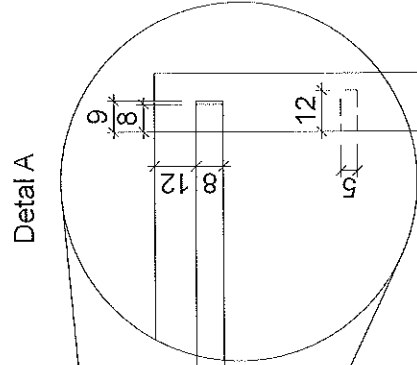
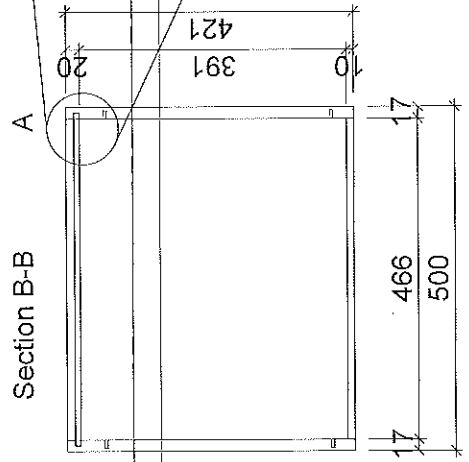
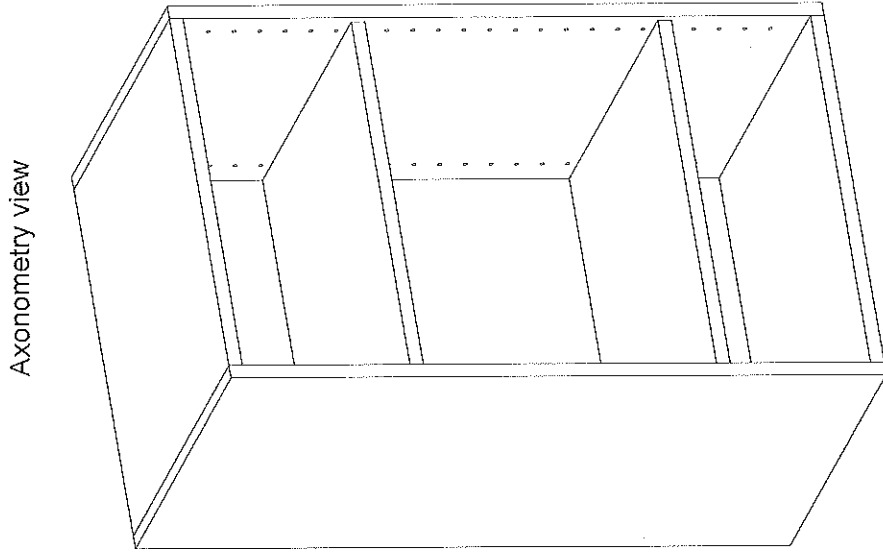
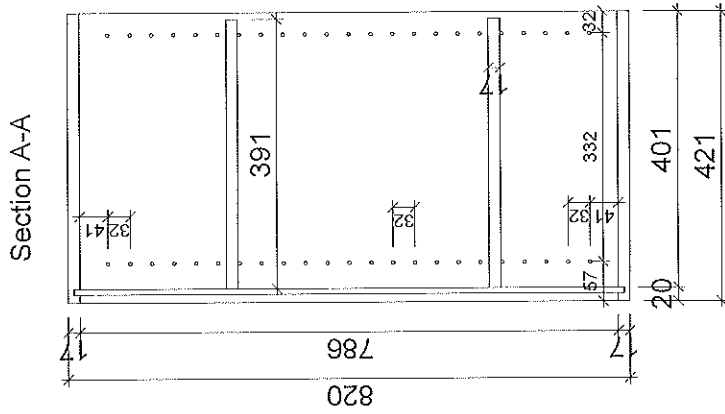
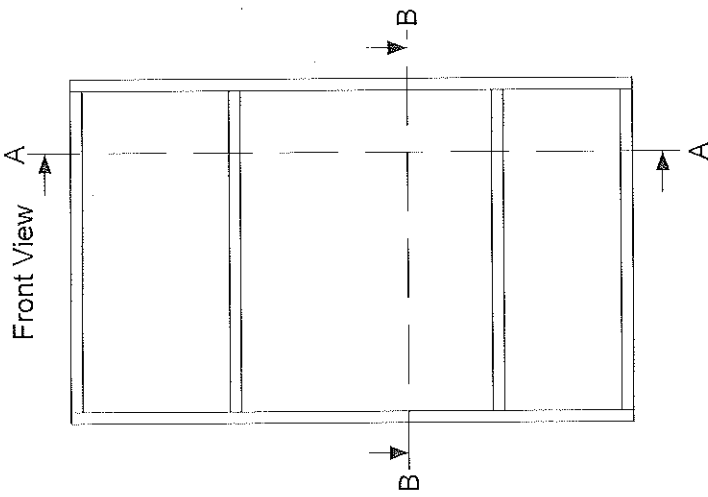
Q.10 Generate part list and final drawing output file of drawn objects (Refer to question 09).

**Ans.** Refer Attachment 02

Q.11 Draw all possible views of corner bridle joint with 200x60x24 mm dimensions for both arms.

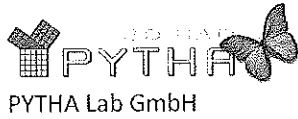
**Ans.** Refer Attachment 03





Name : XXXXX XXXXX  
 Reg. No. : xxxxxxxxxxxx  
 Semester : V Sem.  
 Title : Open Cabinet  
 Scale : 1:10 / 1:2  
 Subject : CAD 3D Drawing  
 Sub. Code : SCS1506  
 Date : Xx/xx/xxxx  
 School : School of Woodworking Skills





Project : Open Cabinet

Customer : School of Woodworking Skills

### Part List

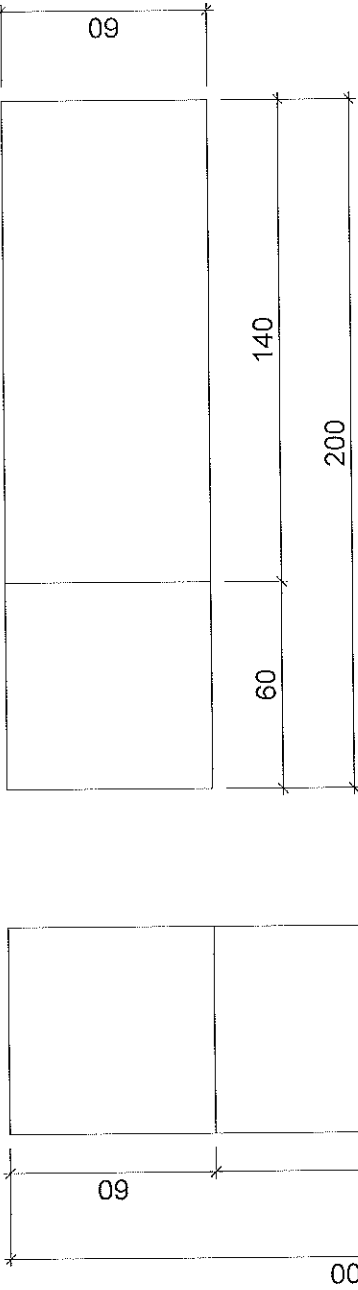
<i>Qty.</i>	<i>Name (tree)</i>	<i>Length</i>	<i>Width</i>	<i>Thickness</i>
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Submitted By -

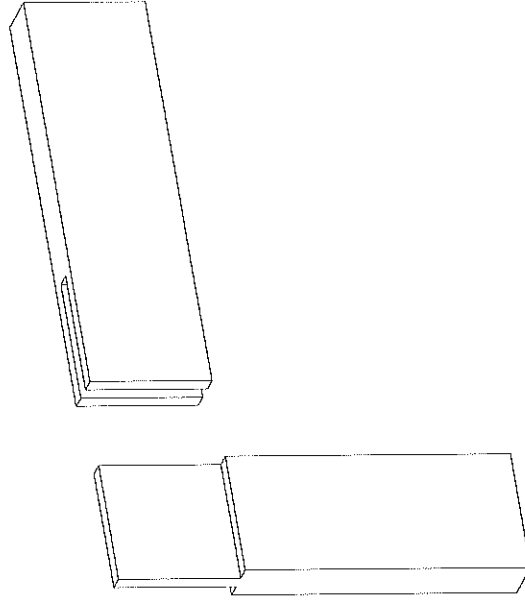
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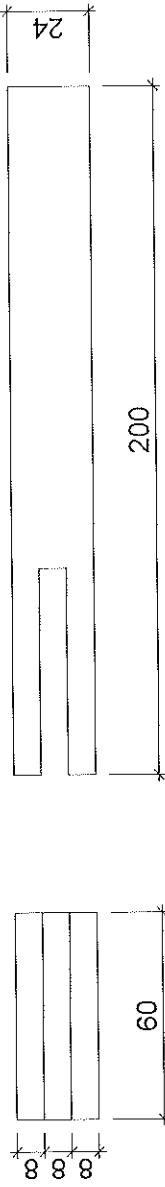
Front View



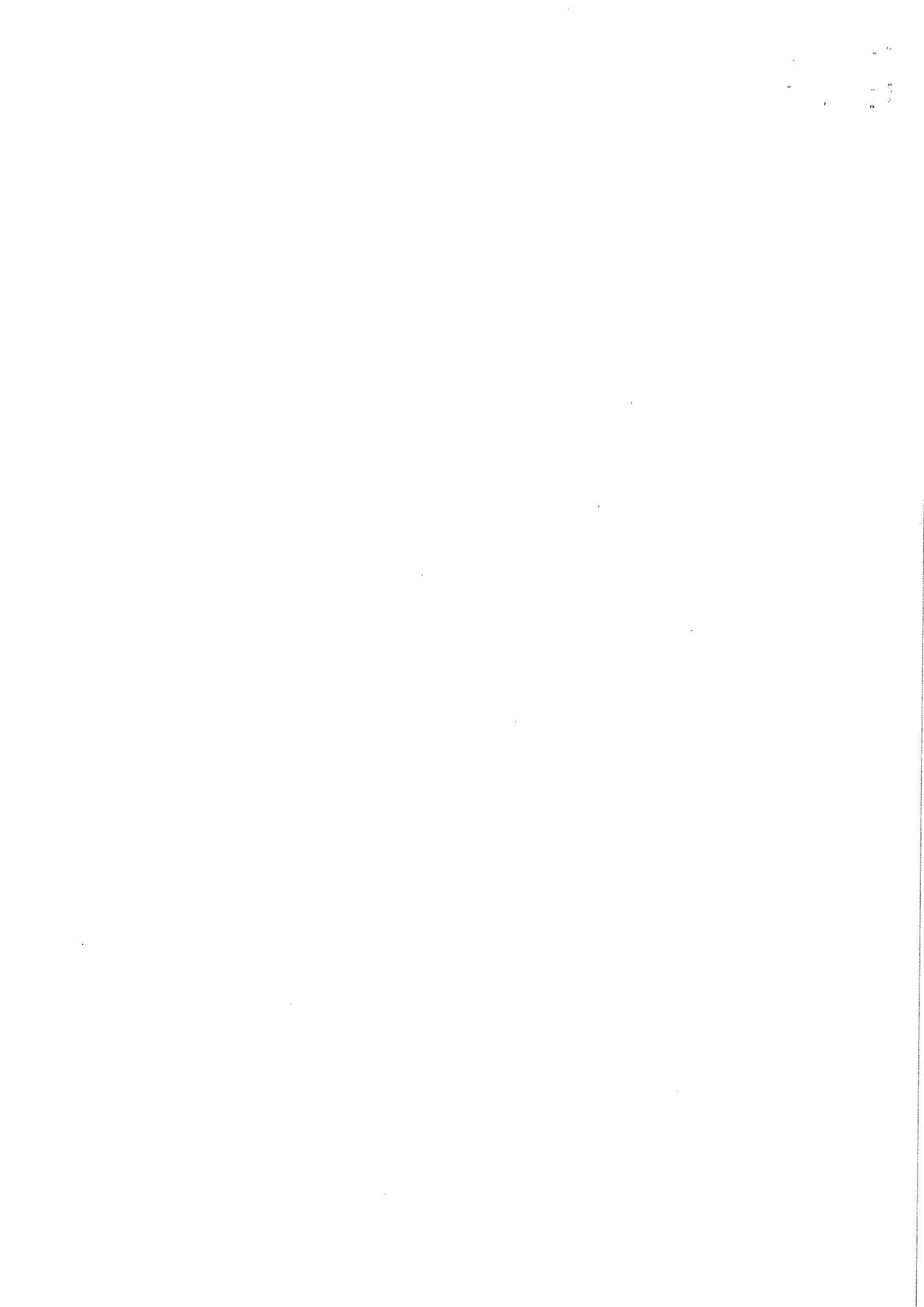
Axonometry view



Top View



Name : XXXXX XXXXXX  
Reg. No. : xxxxxxxxxxxxxx  
Semester : V Sem.  
Title : Open Cabinet  
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Subject : CAD 3D Drawing  
Sub. Code : SCS1506  
Date : Xx/xx/xxxx  
School : School of Woodworking Skills





# BHARTIYA SKILL DEVELOPMENT UNIVERSITY

Registration No.: .....

Set – A

School of Woodworking Skills

Session: 2021-22 (Summer Semester)

B. Voc. Program, 3<sup>rd</sup> Semester,

End-Sem. Examination

Course Code: GEN1309

Time: 3 Hours

Course Name: Woodworking CAD

Max. Marks: 50

**Instruction:**

1. Answer all questions from section A, each question carries one mark.
2. Answer all questions from section B, each question carries five marks.
3. Answer all questions from section C, each question carries ten marks.

**Section – A**

05X01 = 05 Marks

Q.1 Which axis is used to show depth in AutoCAD?

- |       |         |
|-------|---------|
| (a) X | (b) Y   |
| (c) Z | (d) WCS |

Q.2 What is the minimum allowable number of layers in a drawing?

- |       |       |
|-------|-------|
| (a) 0 | (b) 5 |
| (c) 1 | (d) 2 |

Q.3 Which of the following is not a property of an object?

- |                 |               |
|-----------------|---------------|
| (a) Line weight | (b) Measure   |
| (c) Hyperlink   | (d) Elevation |

Q.4 What you cannot create from the Offset command?

- |                          |                        |
|--------------------------|------------------------|
| (a) Vertical straight    | (b) Concentric circles |
| (c) Three parallel lines | (d) Parallel arcs      |

Q.5 What is the difference between the Scale command from the command Zoom

- |   |
|---|
| (a) Scale for single object, while the Zoom whole plan                                  |
| (b) No difference   |
| (c) Scale can grow / shrink a shape up 10 times, while the Zoom has no limits           |
| (d) Scale changes the size of objects, while Zoom changes the visibility of the project |

**Section – B**

03X05 = 15 Marks

Q.6 Define layers, necessity of layers and how can you remove the empty layers from drawing.

Q.7 Define Array with its short key and explain its types with neat sketch.

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Q.8 Explain the following tools and also mention their short key being used in AutoCAD.

- (a) Explode (b) Extend (c) Polygon (d) Hatch (e) Offset

### Section – C

03X10 = 30 Marks

Q.09 Draw all possible views required and show details of an Open Cabinet with following aspects-

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- e) Follow 32 hole drilling system for shelves
- f) 2 shelves inside cabinet
- g) Shelves depth is 10 mm short (less) from front edge of side wall
- h) Back wall placement from back edge should be 12 mm
- i) 8 mm groove in sides for back wall fixing
- j) Diameter of drills is 5 mm & depth 12 mm.

Q.10 Generate part list and final drawing output file of drawn objects (Refer to question 09).

Q.11 Draw all possible views of corner bridle joint with 200x60x24 mm dimensions for both arms.