BHARTIYA SKILL DEVELOPMENT UNIVERSITY

Registration No.....

School of Woodworking Skills

Session: 2020-21 (Summer Semester)

B. Voc. Program, 1st Semester

End sem. Examination (Make-up)

Course Code: SCS1101 **Time: 3 Hour**
Course Name: Hand Skills and measurement transfer **Max. Marks: 100**
Instruction:

- Answer all questions from section A, each question carries one mark.
- Answer six questions from section B out of eight, each question carries five marks.
- Answer all question from section C, each question carries ten marks.

Section A

20X01 = 20 Marks

Q 1: Which saw is best suited to cut wood in along the grain?
(A) Indian Hand Saw (B) Japanese Hand Saw
(C) Coping Saw (D) Hack Saw

Q 2. Which one is not a cutting tool?
(A) Japanese saw (B) Rip Saw
(C) Jack Planner (D) None of the them

Q 3. Which tool is used for 90^0 angle measurement?
(A) File (B) Double Meter
(C) Try Square (D) Marking Gauge

Q 4. One Meter is equivalent to how many millimeter?
(A) .001mm (B) 1000mm
(C) 100mm (D) .01mm

Q 5. Which one sand paper will give a better surface finish?
(A) P220 (B) P180
(C) P100 (D) P150

Q 6. One millimeter is equivalent to how much centimeter?
(A) 100cm (B) 1cm
(C) .01cm (D) 0.1Cm

Q 7. Which one is a marking tool?
(A) Japanese saw (B) marking gauge
(C) Folding ruler (D) All of the them

Q 8. Which one sand paper will give a poor surface finish?
(A) P280 (B) P180
(C) P100 (D) P150

Q 9. Which tool is best suited to measurement transfer?
(A) Try Square (B) Miter square
(C)Bevel square (D) All of them

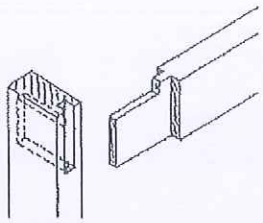
Q10.The smallest division in Folding ruler is

(A) 1 mm (C)1 cm

(B) 10 mm (D) None of them

Q11: Tick the right name of the joint shown in the figure below:

A. Housing Joint
B. Dovetail Joint
C. Housing Rabbet Joint
D. Tenon and Mortice Joint



Q.12: If the size of a board is 5-meter-long and 15-centimeter-wide, then total area of the board in m^2 would be:

(A) 7500 (B) 3.5

(C) 0.75 (D) 1.5

Q 13: How much gap should be maintained in between cutting knife and the cap Iron (top blade) in jack planer?

(A) 25 mm (B) 20 mm

(C) 2.5 mm (D) None

Q 14. Which one sand paper will give a better surface finish?

(A) P320 (B) P180

(C) P100 (D) P150

Q 15 Try Square is used for

(A) Straight lines (B) Checking 90

(C) Both A & B (D) None

Q 16 Coping Saw is best suited to cut wood in

(A) Round Shape (B) Intricate shape

(C) Both A & B (D) None

Q 17 Which file is used to sharpen the Indian hand saw?

(A) Flat File (C) Round file

(B) A & B both (D) Triangular Saw

Q18. Which one is a measuring tool?

(A) File (B) Marking gauge

(C) Try square (D) A & C Both

Q 19. Which is a cutting tool?

(A) Japanese saw (C) Rip Saw

(B) Jack Planner (D) All of the them

Q 20. Which tool is used for 90^0 angle measurement?

(A) File (B) Double Meter

(C) Try Square (D) Marking Gauge

Section B

06X05 = 30 Marks

Q21. Draw the labeled diagram of the following tools.

a) Rip saw .
b) Chisel

Q22. Draw the half lap dovetail joint and also write the step to make it,
Q23. Write short notes on rip saw and coping saw with diagram.
Q24. Write short notes on following with diagram
a. Try square.
b. Marking gauge.
Q25. What do you mean hand Saw? Differentiate Rip saw and cross cut saw.
Q26. What is Lap and Butt Joint Define it with proper Diagram?
Q27. Write Short notes on any two measuring tools.
Q28.Draw the Half Lap joint with neat and clean diagram.

Section C

05X10 = 50 Marks

Q29. What do you mean by measurement transfer classify the hand tools?
Q30. What is Jack planner write down its parts name with Diagram?
Q31. Discuss about the following
a. Files
b. Sand paper
Q32. Discuss any five kind of marking symbol and their application?
Q33. Discuss briefly about any two type of cutting tool and two type of marking tool with diagram.

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

Answer key.....

School of Woodworking Skills

Session: 2020-21 (Summer Semester)

B. Voc. Program, 1st Semester,

Answer key

End Sem. Examination (Make up)

Course Code: SCS1101 **Time: 3 Hour**

Course Name: Hand Skills and measurement transfer **Max. Marks: 100**

Instruction:

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Section A

Q 1: Which saw is best suited to cut wood in along the grain?

(A) Indian Hand Saw (B) Japanese Hand Saw

(C) Coping Saw (D) Hack Saw Ans. A

Q 2. Which one is not a cutting tool?

(A) Japanese saw (B) Rip Saw

(C) Jack Planner (D) None of the them Ans. D

Q 3. Which tool is used for 90^0 angle measurement?

(A) File (B) Double Meter

(C) Try Square (D) Marking Gauge Ans. C

Q 4. One Meter is equivalent to how many millimeter?

(A) .001mm (B) 1000mm

(C) 100mm (D) .01mm Ans. B

Q 5. Which one sand paper will give a better surface finish?

(A) P220 (B) P180

(C) P100 (D) P150 Ans. A

Q 6. One millimeter is equivalent to how much centimeter?

(A) 100cm (B) 1cm

(C) .01cm (D) 0.1Cm Ans. D

Q 7. Which one is a marking tool?

(A) Japanese saw (B) marking gauge

(C) Folding ruler (D) All of the them Ans. B

Q 8. Which one sand paper will give a poor surface finish?

(A) P280 (B) P180

(C) P100 (D) P150 Ans. C

Q 9. Which tool is best suited to measurement transfer?

(A) Try Square (B) Miter square

(C)Bevel square (D) All of them Ans. D

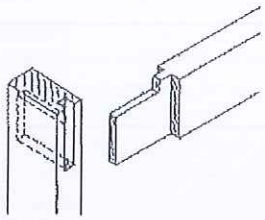
Q10. The smallest division in Folding ruler is

(A) 1 mm (C)1 cm

(B) 10 mm (D) None of them Ans. A

Q11: Tick the right name of the joint shown in the figure below:

A. Housing Joint
B. Dovetail Joint
C. Housing Rabbet Joint
D. Tenon and Mortice Joint



Q.12: If the size of a board is 5-meter-long and 15-centimeter-wide, then total area of the board in m^2 would be:

(A) 7500 (B) 3.5
(C) 0.75 (D) 1.5 Ans. C

Q 13: How much gap should be maintained in between cutting knife and the cap Iron (top blade) in jack planer?

(A) 25 mm (B) 20 mm
(C) 2.5 mm (D) None Ans. C

Q 14. Which one sand paper will give a better surface finish?

(A) P320 (B) P180
(C) P100 (D) P150 Ans. A.

Q 15 Try Square is used for

(A) Straight lines (B) Checking 90
(C) Both A & B (D) None Ans. C.

Q 16 Coping Saw is best suited to cut wood in

(A) Round Shape (B) Intricate shape
C) Both A & B (D) None Ans. C

Q 17 Which file is used to sharpen the Indian hand saw?

(A) Flat File (C) Round file
(B) A & B both (D) Triangular Saw Ans. D

Q18. Which one is a measuring tool?

(A) File (B) Marking gauge
(C) Try square (D) A & C Both Ans. C

Q 19. Which is a cutting tool?

(A) Japanese saw (C) Rip Saw
(B) Jack Planner (D) All of the them Ans. D

Q 20. Which tool is used for 90^0 angle measurement?

(A) File (B) Double Meter
(C) Try Square (D) Marking Gauge Ans. C

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Section B

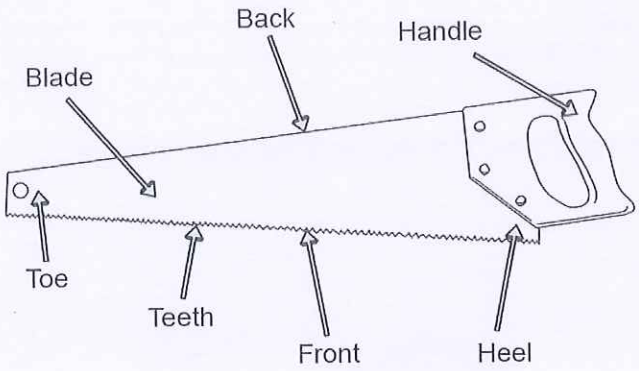
06X05 = 30 Marks

Q21. Draw the labeled diagram of the following tools.

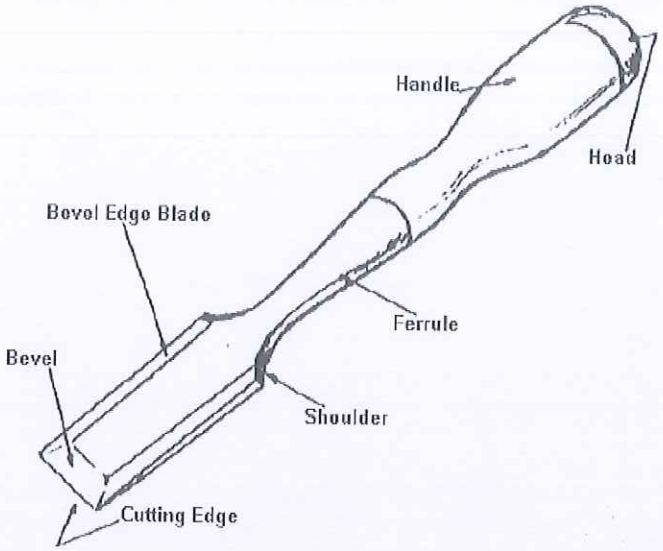
a) Rip saw .

b) Chisel

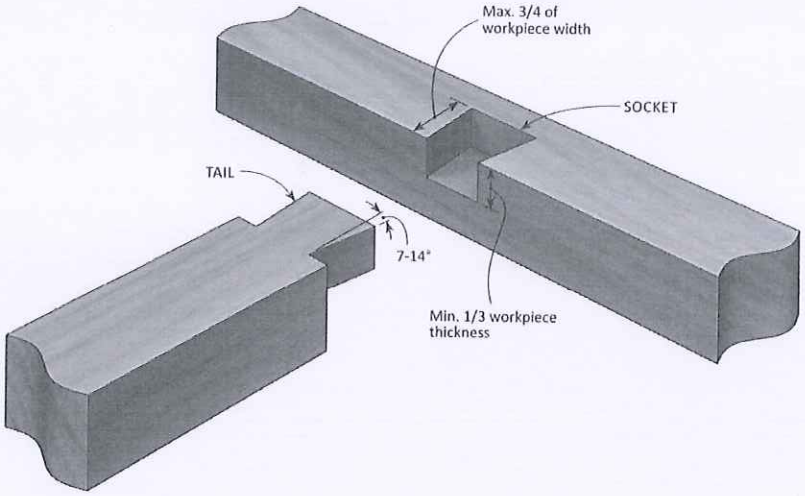
Ans. **Rip saw**



chisel



Q22.Draw the half lap dovetail joint and also write the step to make it,
Ans.



PROCEDURE

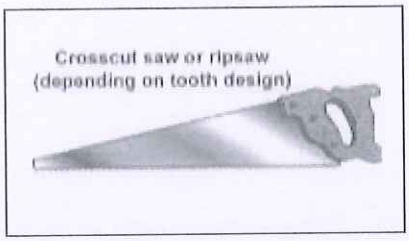
1. First of all read the drawing and measure the workpieces.
2. Mark the dimensions and all required marking symbols on the work piece as per the drawing and perform the measurement transfer.
3. Half of the material should be removed from each piece with the help of saw and chisel.
4. Then assemble the assemble the pieces.

Q23. Write short notes on rip saw and coping saw with diagram.

Ans. In woodworking and carpentry, hand saws, also known as "panel saws", are used to cut pieces of wood into different shapes. This is usually done in order to join the pieces together and carve a wooden object. They usually operate by having a series of sharp points of some substance that is harder than the wood being cut.

Rip saw

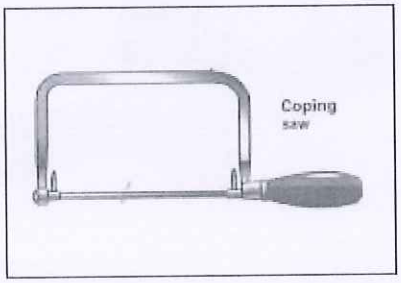
It is best suitable for Cutting the wood parallel to the direction of wood grain (i.e. for along the grain



It create wider Kerf as compare to Cross cut saw.

Coping saw

It is best suitable for Cutting the small intricate and round shape in wood



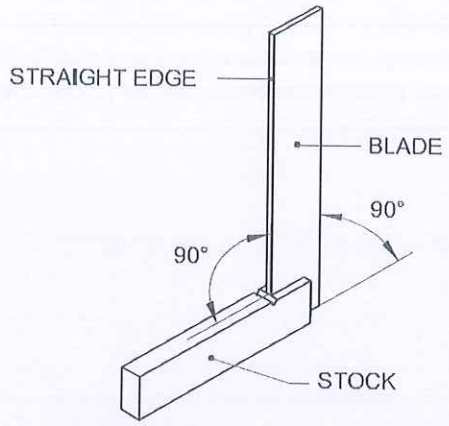
Q 24. Write short notes on following with diagram

a. Try square.
b. Marking gauge.

Ans.

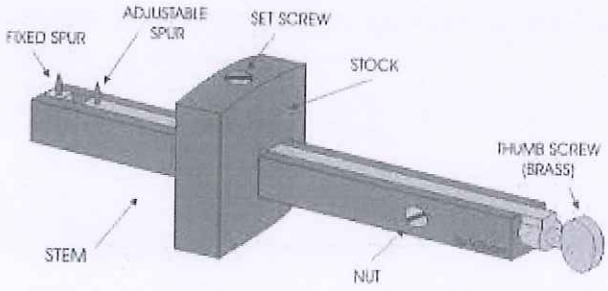
Try square

A **try square** or **try-square** is a woodworking tool used for marking and checking 90° angles on pieces of wood. Though woodworkers use many different types of **square**, the **try square** is considered one of the essential tools for woodworking. The **square** in the name refers to the 90° angle.



Marking gauge.

marking gauge, also known as a scratch gauge is used in woodworking and metalworking to mark out lines for cutting or other operations. The purpose of the gauge is to scribe a line parallel to a reference edge or surface. It is used in joinery and sheet metal operations.



Q 25. What do you mean hand Saw? Differentiate Rip saw and cross cut saw.

Ans. In woodworking and carpentry, hand saws, also known as "panel saws", are used to cut pieces of wood into different shapes. This is usually done in order to join the pieces together and carve a wooden object. They usually operate by having a series of sharp points of some substance that is harder than the wood being cut.

Difference between Rip Saw and Cross Cut Saw

S. No.	Rip Saw	Cross Cut Saw
1.	It is best suitable for Cutting the wood parallel to the direction of wood grain (i.e. for along the grain Cutting)	It is best suitable for Cutting the wood against the direction of wood grain (i.e. Cross the grain cutting)

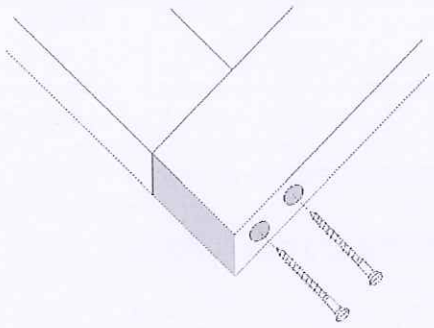
2.	It create wider Kerf as compare to Cross cut saw.	It create narrower Kerf as compare to Rip Saw.

.

Q26. What is Lap and Butt Joint Define it with proper Diagram?

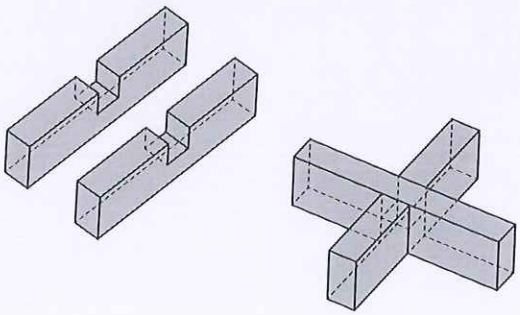
Ans. **Butt Joint**

A butt joint is a joint when one piece of wood butts into another (most often at a right angle, or square to the other board) and is fastened using mechanical fasteners.



Half Lap Joint

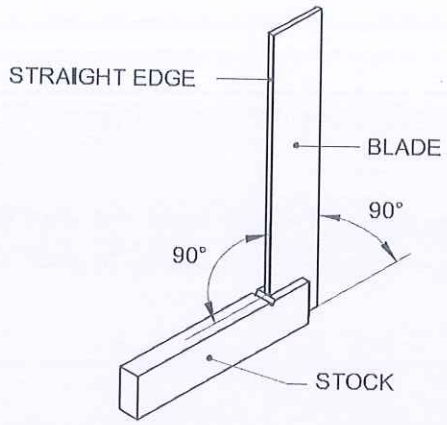
The half-lap joint is where half of each of the two boards being joined is removed so that the two boards join together flush with one another. This type of wood joinery can obviously weaken the strength of the two adjoining boards, but also is a stronger joint than butt joints.



Q27. Write Short notes on any two measuring tools.

Try square

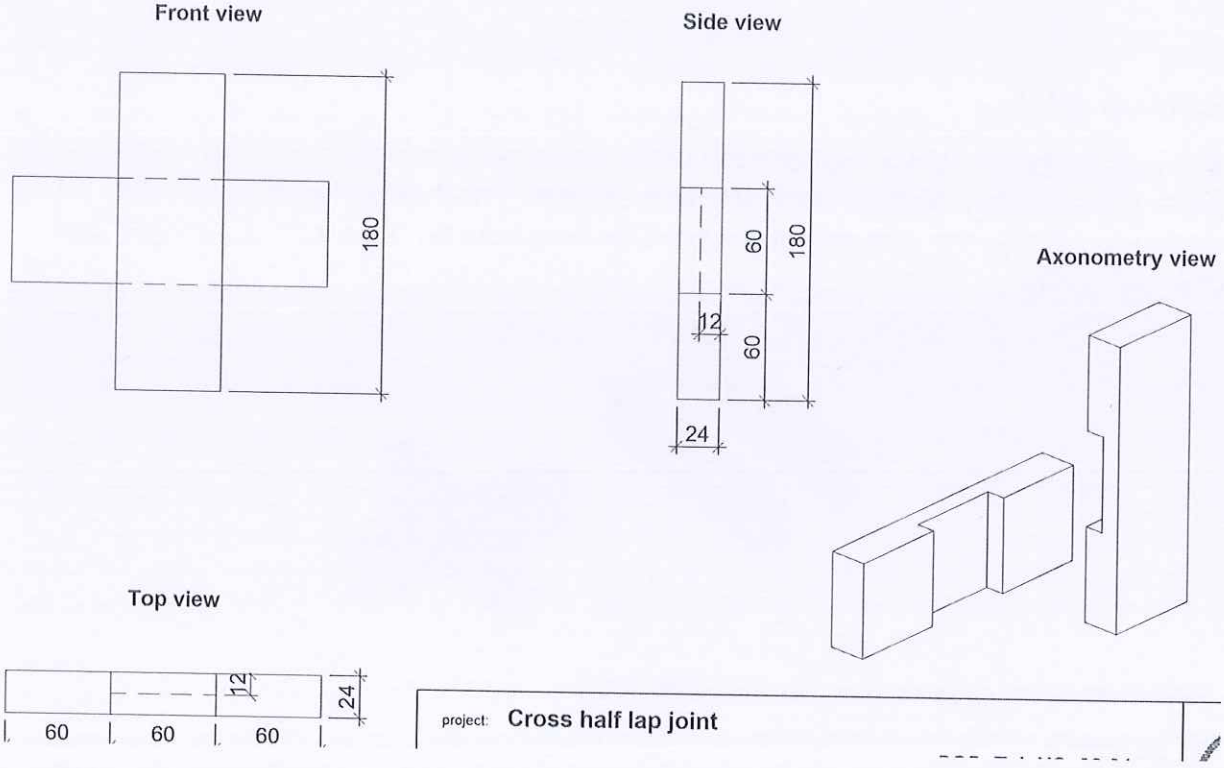
A **try square** or **try-square** is a woodworking tool used for marking and checking 90° angles on pieces of wood. Though woodworkers use many different types of **square**, the **try square** is considered one of the essential tools for woodworking. The **square** in the name refers to the 90° angle.



2. Folding ruler- It is a measuring tool used to measure the object dimension

Q28.Draw the Half Lap joint with neat and clean diagram.

Ans.



BHARTIYA SKILL DEVELOPMENT UNIVERSITY

Section C

06X10 = 24 Marks

Q29. What do you mean by measurement transfer classify the hand tools.

Ans. **Measurement transfer**

It is very essential step for making any joint and any object it means to transfer marking and symbols from one piece to the other piece of wooden piece to make precise joint if marking and measurement transfer is correct then it become easy to make the nice and precise joint.

Hand tools

It is classified generally in four types

1. Cutting tools
   a. Hand saw
   b. Jack planner
   c. Chisel
   d. Files and sand paper (material cutting by abrasive action)

2. Marking tools
   a. Marking gauge
   b. Divider
   c. Compass
   d. Try square etc.
3. Measuring tools
   a. Try square
   b. Folding ruler
   c. Steel ruler
   d. Roll meter etc.
4. Miscellaneous tools
   a. Pliers
   b. Wrench
   c. Nail pincers
   d. Screw driver etc.

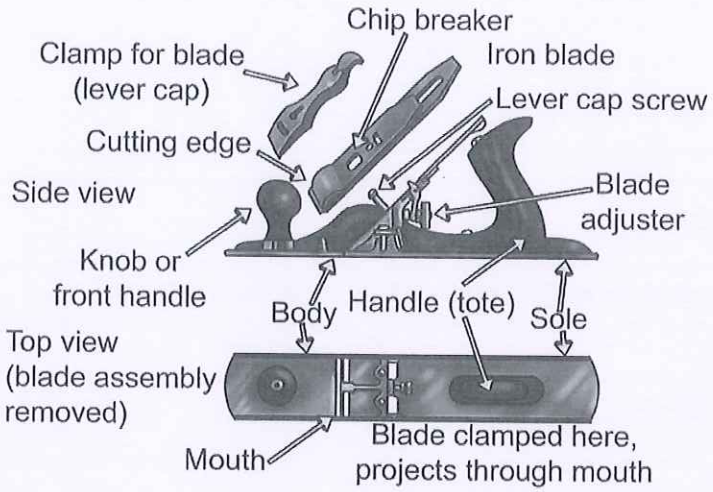
Q30. What is Jack planner write down its parts name with Diagram?

Ans. **Jack Planner:** It is a cutting tool that used to flatten, reduce the thickness, and impart a smooth surface to a rough workpiece of lumber or timber.

Parts of the Jack Planner

1. **Sole** is the bottom face of the plane.
2. **Mouth** is an opening in the sole of the plane through which the blade extends, and through which wood shavings rise.
3. **Iron** is a steel blade which cuts the wood.
4. **Cap iron** or **chipbreaker** reinforces the iron and curls and breaks apart wood shavings as they pass through the mouth.
5. **Lever Cap** secures the cap iron and iron firmly to the frog.
6. **Depth adjustment knob** controls the cutting depth of the iron.

7. **Lateral adjustment lever** skews the iron so that the depth of cut is uniform across the mouth.
8. **Backward Handle or Tote** is the principal handle for gripping the plane.
9. **Forward handle or Knob** allows a second hand to guide the plane.



Q31. Discuss about the following
   a. Files
   b. Sand paper

Ans.

File, in hardware and **metalworking**, tool of hardened steel in the form of a bar or rod with many small cutting edges raised on its longitudinal surfaces; it is used for smoothing or forming objects, especially of metal

Sand paper is a special thick paper with a rough abrasive surface that is used to remove stains caused due to glue and scratches, similarly for finishing and for roughing operation (before doing paint and gluing the parts together).

Roughing is inversely proportional to grit size

- Larger grit size suitable for better surface finish.
- Smaller grit size suitable for roughing operation.

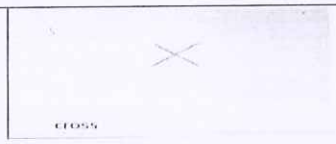
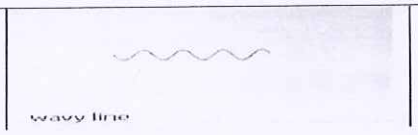
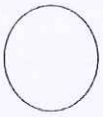
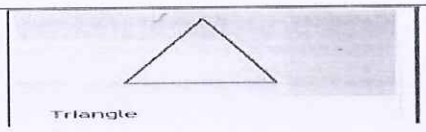
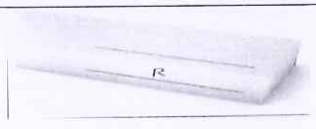
Sand paper comes in different grit size depending upon the abrasive particle size.
According to FEPA standard grit size for sand paper are as follows.

S.No.	FEPA Grit Designation	Significance
1.	P12 to P36	Extra coarse (very Fast removal of material)
2.	P40 to P50	Coarse (Fast removal of material)
3.	P60 to P80	Medium removal of material

4.	P100 to P120	Fine (sanding bare wood in preparation for finishing, not suitable for removing varnish or paint from wood, use for cleaning plaster and water stain from wood)
5	P150 to P220	Very Fine removal of Material
6	P220 to P360	Very Fine (sanding finishes between coats)
7.	P400 to P600	Extra fine, start polishing of wood

Q32. Discuss any five kind of marking symbol and their application?

Ans. Marking Symbols are as follows:

S .No.	Designation	Diagram	Significance
1.	Cross		It means throughout cut.
2.	Wavy line		It means material has to be removed throughout.
3.	Circle		It means end of cutting or material removal.
4.	Triangle		It is an assembly symbol. It is used to avoid the confusion during the assembly.
5.	Groove		The edge of the groove is symbolically indicated by lines. The G denotes the groove
6.	Rebate		The edge of the rebate is symbolically indicated by lines and R denotes the rebate.

Q33. Discuss briefly about any two type of cutting tool and two type of marking tool with diagram.

Ans.

Crosscut Saw or Ripsaw:

A crosscut saw is used to make straight cuts across the grain of the wood. The teeth of a crosscut saw are pointed like a knife and cut on both the forward and backward strokes of the blade.

Chisels

Chisels are tools that can remove thick or thin shavings of wood, depending on how they are held, and can be used in of Bevel blade edge places that are inaccessible to saws or planes.
They can also be used for cutting precise grooves for making joints.
edge

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

Registration No.: .....

School of Woodworking Skills

Session: 2020-21 (Summer Semester)

B. Voc. Program, 1st Semester,

Make-up Examination

Course Code: SCS1105 | **Time: 3 Hours**

Course Name: Carpenter Materials | **Max. Marks: 100**

Instruction: All the questions are compulsory.

Section – A

20X01 = 20 Marks

Q1. Which part of the trunk is responsible for the production of new wood?

(a) Pith (b) Cambium

(c) Sapwood (d) Bast

Q2. The speed at which the tool cutting edge moves

(a) Feed rate (b) Cutting speed

(c) Impregnation (d) None of these

Q3. In which season wood grows very quickly?

(a) Summer (b) Autumn

(c) Spring (d) None of these

Q4. The colour of cellulose fibres is?

(a) White (b) Black

(c) Gray (d) Brown

Q5. Veneers made from the rotating tree trunk are known as

(a) Peeled Veneer (b) Sliced Veneer

(c) Sawn Veneer (d) Blind Veneer

Q6. Adhesive that sets two components through a chemical reaction

(a) Dispersion adhesive (b) Hot melt adhesive

(c) Contact adhesive (d) Reaction adhesive

Q7. Which process is not a part of the preliminary work for surface finishing?

(a) Grinding (b) Oiling

(c) Brushing (d) Sand Blasting

Q8. Which process is not used for changing the wood colour?

(a) Bleaching (b) Pickling

(c) Patinate (d) Equilize

Q9. Which veneer manufacturing method produces plane slices?

(a) Slicing (b) Sawing

(c) Peeling (d) All of the above

Q10. Which of the following is not an advantage of glass?

(a) Transparency (b) Recyclable

(c) Sharp Edges (d) Waterproof

Q11. Adhesive that sets through evaporation of water

(a) Dispersion adhesive (b) Hot melt adhesive

(c) Reaction adhesive (d) Contact adhesive

Q12. When the cell (bound) water is released from wood, the wood has

(a) Constant volume and decreased weight

(b) Constant volume and Constant weight

(c) Decreased volume and decreased weight

(d) Decreased volume and constant weight

Q13. Glass becomes hard on heating.

(a) True (b) False

Q14. European or commonly used grade for laminate is

(a) EN 532 (b) EN 338

(c) EN 438 (d) None

Q15.The Aluminum Oxide used for wood working as

(a) adhesive (b) cleaning agent

(c) abrasive (d) None

Q 16. The property of wood that resists abrasion and scratches

a) Strength b) Hardness c) Resilience d) None

Q 17. In HGP laminate, P stands for

(a) Pressurized
b) Post formed
(c) Preprocessed
(d) Penetrated

Q18. Tensile strength is

(a) Strength of fiber
(b) total deformation
(c) Hardness of wood
(d) None

Q. 19. In HGF laminate, F stands for

(a) Pressurized
b) Post formed
(c) Preprocessed
(d) Fire Retardent

Section – B

06X05 = 30 Marks

(Attempt any 06 questions out of 08 questions)

Q21. Write the disadvantages of using the veneers.

Q22. Write the safety measures to be taken while using glasses in woodworking.

Q23. Explain the various components of the tribe (trunk) with diagram.

Q24. Discuss contact adhesives, their properties and processing instructions in detail.

Q25. Write the preliminary requirements of surface treatment.

Q26.Define is laminate with its advantage?

Q27.Write short note on: i) Tensile and compressive strength wood. Ii) Humidity

Q 28. What are the advantages of Linoleum?

Section – C

05X10 = 50 Marks

Q29. Discuss dispersion adhesives, their properties and processing instructions in detail.

Q30. Explain the animal wood pests and vegetable wood pests in detail.

Q31. Discuss the various methods used for changing the wood colour.

Q32. Write short note on bonded and coated abrasive.

Q.33. Explain major characteristics of Laminate.

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Answer key.....

School of Woodworking Skills

Session: 2020-21 (Summer Semester)

B. Voc. Program, 1st Semester,

Make-up Examination

Answer key

Course Code: SCS1105 **Time: 3 Hours**

Course Name: Carpenter Materials **Max. Marks: 100**

Instruction: All the questions are compulsory.

Section – A

20X01 = 20 Marks

Q1. Which part of the trunk is responsible for the production of new wood?

(a) Pith (b) Cambium

(c) Sapwood (d) Bast

Q2. The speed at which the tool cutting edge moves

(a) Feed rate (b) Cutting speed

(c) Impregnation (d) None of these

Q3. In which season wood grows very quickly?

(a) Summer (b) Autumn

(c) Spring (d) None of these

Q4. The colour of cellulose fibres is?

(a) White (b) Black

(c) Gray (d) Brown

Q5. Veneers made from the rotating tree trunk are known as

(a) Peeled Veneer (b) Sliced Veneer

(c) Sawn Veneer (d) Blind Veneer

Q6. Adhesive that sets two components through a chemical reaction

(a) Dispersion adhesive (b) Hot melt adhesive

(c) Contact adhesive (d) Reaction adhesive

Q7. Which process is not a part of the preliminary work for surface finishing?

(a) Grinding (b) Oiling

(c) Brushing (d) Sand Blasting

Q8. Which process is not used for changing the wood colour?

(a) Bleaching (b) Pickling

(c) Patinate (d) Equilize

Q9. Which veneer manufacturing method produces plane slices?

(a) Slicing (b) Sawing

(c) Peeling (d) All of the above

Q10. Which of the following is not an advantage of glass?

(a) Transparency (b) Recyclable

(c) Sharp Edges (d) Waterproof

Q11. Adhesive that sets through evaporation of water

(a) Dispersion adhesive (b) Hot melt adhesive

(c) Reaction adhesive (d) Contact adhesive

Q12. When the cell (bound) water is released from wood, the wood has

(a) Constant volume and decreased weight

(b) Constant volume and Constant weight

(c) Decreased volume and decreased weight

(d) Decreased volume and constant weight

Q13. Glass becomes hard on heating.

(a) True (b) False

Q14. European or commonly used grade for laminate is

(a) EN 532 (b) EN 338

(c) EN 438 (d) None (c)

Q15.The Aluminum Oxide used for wood working as

(a) adhesive (b) cleaning agent

(c) abrasive (d) None (c)

Q 16. The property of wood that resists abrasion and scratches

a) Strength b) Hardness c) Resilience d) None (b)

Q 17. In HGP laminate, P stands for

(a) Pressurized
b) Post formed
(c) Preprocessed
(d) Penetrated (b)

Q18. Tensile strength is

(a) Strength of fiber
(b) total deformation
(c) Hardness of wood
(d) None

Q. 19. In HGF laminate, F stands for

(a) Pressurized
b) Post formed
(c) Preprocessed
(d) Fire Retardent

Section – B

06X05 = 30 Marks

(Attempt any 06 questions out of 08 questions)

Q21. Write the disadvantages of using the veneers.

Ans.

Disadvantages

1. Susceptible to water damage: Over prolonged exposure to water, veneers can get damaged. Unless a sealant is applied on the surface, veneers are prone to water damage in wet conditions.

2. Installation requires skilled workers: Veneer sheets are not easy to install like laminates. They require skilled workers are air gap must be properly removed to get a perfect finish. Also the sheets are to be acclimated before installing, i.e. you have to keep the sheets in the room for 3 – 5 days before installing.

3. More maintenance: Veneers require more maintenance and they need to be polished from time to time. For increased durability, they must be polished periodically.

4. Cannot be repaired: Unlike natural wood furniture which can be easily repaired by sanding several times, it is impossible to repair veneer. As it is very thin, once damaged cannot be repaired.

Q22. Write the safety measures to be taken while using glasses in woodworking.

Ans.

Work safety

Working with glass can be hazardous, but there are several safety tips you can follow to protect yourself and others from injuries.

Eye Protection

Use proper eye protection while working with glass. Please ensure that the goggles are of good quality. It is essential any time you work with glass e.g. cutting or grinding glass.

Ear Protection

Use ear plugs to protect your sensitive ears when working with glasses. Ear plugs protect your ear drums from loud noises and also prevent shards of glass from entering your ear canal causing serious damage inside.

Wear Closed-toe Shoes

The best way to protect your feet against damage from glass is to wear closed-toe shoes that completely cover your feet. Never wear sandals or other open-toe shoes whilst working.

Keep covered up

Keep the rest of your body protected by wearing full covering cloths. Broken glass can cut the skin on your arms and legs, and dangerous chemicals and solder can burn and damage your skin.

Handle Glass Breakage Correctly

Always use a dustpan and brush or another approved method of collecting broken glass. Never use your bare hands or materials such as sponges, napkins or towels to pick up broken glass as tiny glass particles can get stuck in them. It's also important to post a warning sign in the area of the glass breakage to alert others about the potential danger.

Wear Protective Gloves

You should wear thick protective gloves whenever you have a piece of glass in your hand. Be sure that the gloves have a cuff and that they are at least as thick as a typical pair of gardening gloves.

Q23. Explain the various components of the tribe (trunk) with diagram.

Ans.

The tribe

The base layers

If you look at the cross-section of a trunk, you will see that it consists of different zones or layers.

The marrow / marrow tube lies at the center of the trunk and is responsible for the tree growing tall.

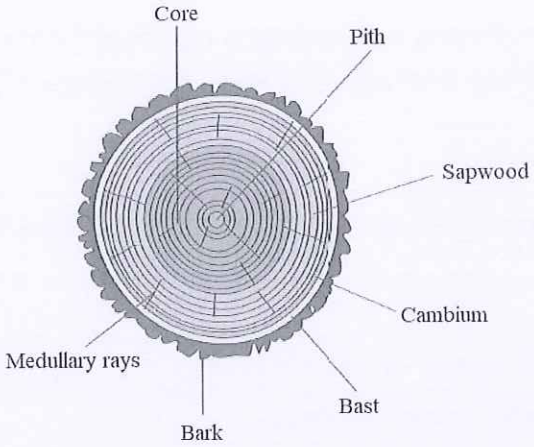
The core (the heartwood) lies in the inner part of the trunk. Heritage comes from old wooden cells that store nutrients. Most of the wood you use as a carpenter comes from this part of the tree because heartwood is more resistant than sapwood. Heartwood can be a darker color than sapwood. This varies depending on the type of wood.

The sapwood (sapwood) has the task of transporting water and nutrients from the roots to the leaves. Sapwood is less durable than heartwood. Sapwood can be lighter in color than the heartwood. This varies depending on the type of wood.

The cambium is the growth layer of the tree. It is a thin, sensitive layer. The cambium is responsible for the production of new wood during the growing season of the tree (spring and summer).

The bast is under the bark. It transports the nutrients produced in the leaves into the tree trunk.

The bark is the outermost layer of the tree. Their function is to protect the tree against extreme temperatures, pests and diseases. The bark is called bark together with the bast.



Q24. Discuss contact adhesives, their properties and processing instructions in detail.

Ans.

Group 4: contact adhesives

Contact adhesives are used for bonds that cannot be pressed with pressing aids. You must apply the contact adhesive on both sides. After a specified flash-off time (drying phase), you can put the parts together and briefly and firmly press them together. The glue sticks immediately.

Properties of contact adhesives

- Contact adhesives adhere immediately after joining the two vented parts

Processing instructions

- Contact adhesive needs a minimum working temperature of approx. 20 ° C. At lower temperatures, the adhesive layers become too hard and cannot be pressed together well.
- Note the information provided by the adhesive manufacturer. Different conditions have to be observed depending on the adhesive.
- Apply contact adhesives evenly and quickly.
- Position the parts to be glued very precisely before joining, as they can no longer be moved after joining.

Q25. Write the preliminary requirements of surface treatment.

Ans.

Preliminary work

The preliminary work is extremely important for a high-quality surface treatment. Depending on the surface treatment, one or more preparatory work is necessary.

Patching / spatula

Resin pockets, loose knots and dents must be patched out, dampened or filled with a spatula before sanding.

Grind

If the work-pieces are not yet flat, you must grind them flat using a pre-sanding method. You can use sanding sheet grit 100 and 120 for this.

With the subsequent fine-tuning, you will achieve a smooth wooden surface. For fine sanding, depending on the type of wood and type of surface treatment, use the sanding sheet grit 150 or 180. Make sure that you break or round the edges so that the protective layer can be optimally distributed and adhered well.

Water

If you want to change the color of the wood by staining, you must first water the work pieces in order to achieve a fine wood surface. When watering, the wood fibers are straightened by the water and the wood surface becomes rough again. Subsequent sanding removes the upright wood fibers so that a fine wood surface is created.

Equalize

To ensure that the stain is absorbed evenly, it may be advisable to level the surface of the wood. For this you use an equalizer, which you apply evenly to the wood.

Resin removal

Resin-containing wood types must be de-resinated with soapy water or solvents (acetone) so that the stain can penetrate the wood surface.

Brushing / sandblasting / dry ice blasting

You can use these techniques to remove the soft early wood so that a textured surface is created. Sandblasting and dry ice blasting work are usually carried out by a specialist.

Impregnate

You have to impregnate wood if you want to use it for outdoor applications and protect it from pests. Impregnations are mostly colorless and penetrate deep into the wood.

Dust off

At the end of the preparatory work, it is important that you dust the wood thoroughly so that the subsequent surface treatments adhere well.

Q26. Define Laminate with its advantage.

Ans. High Pressure Laminates (HPL), as defined by the European and international standards for HPL, EN 438 and ISO 4586, are high-density panels (≥1.35g/cm3), finished and ready for use, which have exceptional mechanical, physical strength and chemical resistance, are easy to work and simple to maintain. HPL panels are made of several layers of cellulose fibre material impregnated with thermosetting resins and then simultaneously subjected to both pressure (>7MPa)) and heat (140 / 150°C) in special presses, for a fixed time, which varies depending on the type of laminate

Q27.Write short note on: i) Tensile and compressive strength wood. Ii) Humidity

Ans.

i) TENSILE STRENGTH :The tensile strength of wood parallel to the grain depends upon the strength of the fibers and is affected not only by the nature and dimensions of the wood elements but also by their arrangement. COMPRESSIVE OR CRUSHING STRENGTH :Is very closely related to hardness and transverse shear. There are two ways in which wood is subjected to stress of this kind, namely, (1) with the load acting over the entire area of the specimen, and (2) with a load concentrated over a portion of the area

ii) It is the mass of water vapour present in 1 kg of dry air, and is generally expressed in terms of gram per kg of dry air (g/kg of dry air). It is also called specific humidity or humidity ratio.

Q 28. What are the advantages of Linoleum?

Ans:

- Environmentally, linoleum has a great deal going for it. The product is made primarily from minimally processed natural ingredients.
- It contains almost no petroleum-based chemicals and no chlorinated chemicals. The resources used are renewable or plentiful. It is fully biodegradable.
- From a life-cycle cost standpoint, the lower maintenance requirements will result in significant savings over time.
- Linoleum is a warm material
- Linoleum is a natural material

- There is no electrostatic charge on linoleum
- Linoleum is resistant to a wide range of chemicals
- Linoleum inhibits bacterial growth, which is why it is used in buildings used as a floor covering with increased hygiene requirements becomes.

Section – C

05X10 = 50 Marks

Q29. Discuss dispersion adhesives, their properties and processing instructions in detail.

Ans.

Group 1: Dispersion adhesives (white glue)

With dispersion adhesives, you can carry out numerous interior fittings. Dispersion adhesives differ in the open time, setting time and water resistance.

Stress groups

Dispersion adhesives are divided into water resistance classes D1-D4 according to EN (European standard):

Stress group	Climatic conditions / Areas of application
D1	For bonding indoors without exposure to increased moisture (e.g. furniture, interior fittings, room doors)
D2	For bonding indoors with brief exposure to high humidity. (e.g. furniture and interior fittings in kitchens and bathrooms)
D3	For bonds with short-term exposure to water. (e.g. exterior doors, windows, fixtures in wet rooms)
D4	For bonds with increased longer-lasting exposure to moisture and moisture. (e.g. garden furniture)

Properties of dispersion adhesives

- Dispersion adhesives set (dry) as the water evaporates from the adhesive layer and migrates into the air and into the material.
- Dispersion adhesives become soft and at elastic high temperature. As a result, the strength values of the glue line decrease significantly.

Processing instructions

- Only process bonds with dispersion adhesives after the specified processing times. Some of the water from the adhesive migrates into the wood. This causes it to swell in the area of the joint. This swelling must have subsided before further processing. Pay particular attention to this when routing edges flush. It is ideal if you let the adhesive dry during the night.
- Dispersion adhesives are relatively harmless to humans and the environment.

Q30. Explain the animal wood pests and vegetable wood pests in detail.

Ans.

Wood pests

With wood pests, a distinction is made between animal and vegetable wood pests. Wood pests love moisture, stagnant air and warmth. You have to prevent this if you want to give wood a long life.

Animal wood pests

Animal wood pests include wood pests such as the bark beetle, the goat, the ant, the wood wasp and the rodent beetle, better known under the name «wood worm». The beetles arise from larvae, which in turn hatch from eggs. The actual wood pest is the larva, which gnaws passages into the wood with its strong jaws.

A distinction is made between fresh wood and dry wood insects. Fresh wood insects can only develop in fresh wood, i.e. in the living tree or in freshly felled wood, while dry wood insects usually infest dry wood, i.e. lumber, e.g. Furniture or built-in wood in roof structures.

Vegetable wood pests

There are fungi and rot in the vegetable wood pests. A distinction is made between wood-destroying and wood-staining fungi and rot.

Wood-destroying fungi and rot are:

- White rot, brown rot and mildew.

Wood-staining fungi and rot are:

- Mold, blue stain and red streak.

Q31. Discuss the various methods used for changing the wood colour.

Ans.

Color Schemes

You can change the wood color by staining, patinating or bleaching.

Bleaching

Like hair, wood can also be bleached. This makes the wood lighter and the wood structure less visible. Chemicals such as hydrogen peroxide with ammonia or oxalic acid are used for bleaching. The bleaching liquid is applied to the wood and removed again after a certain exposure time.

Always use gloves and safety glasses when doing bleaching work and work in a well ventilated area. The used rags, sponges and brushes can ignite by themselves. You should therefore always wash them well and dispose of the rags in non-flammable containers.

Pickling

The term stain is used to color wood by applying color pigments dissolved in liquid. There are many different stains. Depending on the type, different colors and effects can be achieved, they are suitable for different types of wood and they differ in the processing. Before pickling, you must always water, grind and remove dust from all workpieces. Then you can apply the stain with the sponge, the stain brush or with the spray gun, leave it on for a certain time and then remove the excess stain.

Patinate

The patination gives the workpiece an old, worn look. Deep-lying areas are stained dark, protruding areas are lightened with the abrasive fleece. The dark stain is normally applied with a special spray gun.

Smoking

This coloring process is mainly used for oak because it contains tannic acid. The oak wood is treated with ammonia vapor, which causes a chemical reaction with the tannic acid and the wood becomes darker.

Treat thermally

The thermal treatment creates thermal wood. However, a special system is necessary for this. If the wood is strongly heated, the wood changes its color to a darker brown. The longer the heating takes, the darker the color.

Q32. Write short note on bonded and coated abrasive.

Ans:

A bonded abrasive is composed of an abrasive material contained within a matrix, although very fine aluminium oxide abrasive may comprise sintered material. This matrix is called a binder and is often a clay, a resin, a glass or a rubber. This mixture of binder and abrasive is typically shaped into blocks, sticks, or wheels. The most common abrasive used is aluminium oxide. Also common are silicon carbide, tungsten carbide and garnet. Another examples of bonded abrasive is grinding wheel.

A coated abrasive is an abrasive grain bonded to a flexible base like paper, cloth, vulcanised fibre or plastic film. Sand paper is an excellent example. Such abrasives come in various grit sizes, ranging from a very coarse 2mm grain to ultra fine grains of less than a millimetre in diameter. As you can imagine some abrasives are better for certain jobs than others, some are

designed for working by hand and others specifically for use with machines like an orbital sander, belt sander or drum sander.

Q.33. Explain major characteristics of Laminate.

Ans.

1. HPL boards are insensitive to all normal household chemicals.
2. They are heat-resistant up to about 150 ° C, for short-term exposure in dry heat.
3. They are water resistant. Standing wet under parked However, objects can stain.
4. The change in shape in the longitudinal and transverse directions is less different. The decisive factor is the direction of the paper, which is usually identical to the grinding direction on the back of the plate. The shrinkage mass in the longitudinal direction is max. 2% o and in the transverse direction max. 4% o. This depends on the prevailing indoor climate.

5. HPL boards have good abrasion resistance, which however Normal HPL sheets can only be bent to a limited extent. For tight Radii are available in postforming plates.
6. The HPL boards are hard and brittle, so they are very cracked and sensitive to impact.

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

Registration No.....

School of Woodworking Skills

Session: 2020-21 (Summer Semester)

B. Voc. Program, 1st Semester,

End Sem. Examination (Make-up)

Course Code: SCS1106 **Time: 3 Hour**
Course Name: Hand Drawing **Max. Marks: 100**
Instruction:

- Answer all questions from section A, each question carries one mark.
- Answer any six question from section B out of eight, each question carries five marks.
- Answer all question from section C, each question carries ten marks.

Section A

20X01 = 20 Marks

Q1. 100 mm is equivalent to
(A) 10 cm (B) 1 cm
(C) 1m (D) None of them

Q2. In India drawing is created generally in which angle of projection
(A) 2nd (B) 1st
(C) 3rd (D) 4th

Q3. 1 Feet are equivalent to
(A) 12 inch (B) 1 inch
(C) 1 meter (D)None of them

Q4. A point lies in front of vertical plane but below horizontal plane it lies in which quadrant.
(A) 2nd (B) 1st
(C) 3rd (D) 4th

Q5. What is the significance of alternate long and short Dash line in technical drawing?
(A) Outlines of the object (B) Hidden surface
(C) A&B Both (D) line of symmetry

Q6. In the given option which pencil will be the darker?
(A) H (B) 2H
(C) 2B (D) 3B

Q7. What is the significance of continuous thick line in technical drawing?
(A) Outlines of the object (B) Hidden surface
(C) A&B Both (D) line of symmetry

Q8. The Representative factor for full scale is
(A) Equal to 1 (B) Always greater than 1
(C) A&B Both (D)None of them

Q9. If an object front view and top view both lie below xy line object is in which quadrant
(A) 2nd (B) 1st
(C) 3rd (D) 4th

Q10. Which one will be the size for A4 Sheet in millimeter?
(A) 420x297 (B) 29.7x21.0
(C) 297x210 (D) 594x841

Q11. In engineering field drawing is created generally in
(A) Km (B) Meter
(C) Millimeter (D) Decameter

Q12. What are the drawing accessories?
(A) pencil (B) Drafter
(C) Compass (D) All of them

Q13. 200 millimeters are equivalent to
(A) 20 Centimeter (B) 20 meter
(C) .2 meter (D)None of them

Q14. A point lies in behind of vertical plane but below horizontal plane it lies in which quadrant.
(A) 2^{nd} (B) 1^{st}
(C) 3^{rd} (D) 4^{th}

Q15. What is the significance of Dash line in technical drawing?
(A) Outlines of the object (B) Hidden surface
(C) A&B Both (D) line of symmetry

Q16. In the given option which pencil will be the Softer?
(A) H (B) 4H
(C) 2B (D) B

Q17. Drawing is created in which angle of projection
(A) 2^{nd} (B) 1^{st}
(C) 3^{rd} (D) Both A & C

Q18. The Representative factor for enlarging scale is
(A) Equal to 1 (B) Always greater than 1
(C) A&B Both (D)None of them

Q19. An object front view and top view both lie below xy line object is in which quadrant
(A) 2^{nd} (B) 1^{st}
(C) 3^{rd} (D) 4^{th}

Q20. Which one will be the size for A3 Sheet in millimeter?
(A) 420x297 (B) 29.7x21.0
(C) 297x210 (D) 594x841

Section B

06X05 = 30 Marks

Q21. Define the following
a) Parallel Projection
b) Perspective projection

Q22. Write down the different type of line used in engineering drawing with its application.

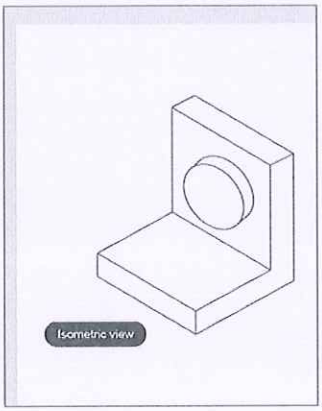
Q23. What do you mean hand drawing? Differentiate artistic drawing and Technical drawing. Draw the layout of a drawing

Q 24. Draw the all possible view of Corner bridle joint.
Q25. What do you mean hand drawing? Explain any four type of drawing accessories.
Q26. Explain the different sizes of drawing sheet use in Technical drawing with Proper Diagram.
Q27. Draw the all possible view of cross half lap joint.
Q28. An object of length 2 feet is drawn on a size of 20mm calculate the RF.

Section C

05X10 = 50 Marks

Q 29. Draw the projection
a) A point is placed 20 mm in front of VP and 20 mm below HP.
b) A point is placed 40 mm in front of VP and 18 mm above HP.
Q 30. Define the Nominal Size, Basic Size & Actual size and Tolerance.
Q 31. Draw the front, top and right side view of the following Diagram in 1st angle projection?



Q 32. Define the following
a. Full size scale with example.
b. Reducing size scale an object of length with example.
Q 33. Write short notes on absolute and relative coordinate system.

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Answer Key

School of Woodworking Skills (SWS)

Session: 2020-21 (Summer Semester)

B. Voc. Program, 1st Semester,

End Sem. (Make up) Examination

Course Code: SCS1106 **Time: 2 Hour**
Course Name: Hand Drawing **Max. Marks: 50**
Instruction:

- Answer all questions from section A, each question carries one mark.
- Answer all question from section B, each question carries four marks.
- Answer all question from section C, each question carries six marks.

Section A

10X01 = 10 Marks

Q1. 100 mm is equivalent to
(A) 10 cm (B) 1 cm
(C) 1m (D) None of them Ans. A

Q2. In India drawing is created generally in which angle of projection
(A) 2nd (B) 1st
(C) 3rd (D) 4th Ans. B

Q3. 1 Feet are equivalent to
(A) 12 inch (B) 1 inch
(C) 1 meter (D)None of them Ans. A

Q4. A point lies in front of vertical plane but below horizontal plane it lies in which quadrant.
(A) 2nd (B) 1st
(C) 3rd (D) 4th Ans. D

Q5. What is the significance of alternate long and short Dash line in technical drawing?
(A) Outlines of the object (B) Hidden surface
(C) A&B Both (D) line of symmetry Ans. D

Q6. In the given option which pencil will be the darker?
(A) H (B) 2H
(C) 2B (D) 3B Ans. D

Q7. What is the tolerance of the given dimension?
(A) 2nd (B) 1st
(C) 3rd (D) 4th Ans. B

Q8. The Representative factor for full scale is
(A) Equal to 1 (B) Always greater than 1
(C) A&B Both (D)None of them Ans. B

Q9. If an object front view and top view both lie below xy line object is in which quadrant
(A) 2nd (B) 1st
(C) 3rd (D) 4th Ans. D

Q10. Which one will be the size for A4 Sheet in millimeter?
(A) 420x297 (B) 29.7x21.0

(C) 297x210 (D) 594x841 Ans. C

Q11. In engineering field drawing is created generally in
(A) Km (B) Meter
(C) Millimeter (D) Decameter Ans. C

Q12. In India drawing is created generally in which angle of projection
(A) 2nd (B) 1st
(C) 3rd (D) 4th Ans. B

Q13. 200 millimeters are equivalent to
(A) 20 Centimeter (B) 20 meter
(C) .2 meter (D)None of them Ans. C

Q14. A point lies in behind of vertical plane but below horizontal plane it lies in which quadrant.
(A) 2nd (B) 1st
(C) 3rd (D) 4th Ans. C

Q15. What is the significance of Dash line in technical drawing?
(A) Outlines of the object (B) Hidden surface
(C) A&B Both (D) line of symmetry Ans. B

Q16. In the given option which pencil will be the Softer?
(A) H (B) 4H
(C) 2B (D) B Ans. D

Q17. In India drawing is created in which angle of projection
(A) 2nd (B) 1st
(C) 3rd (D) 4th Ans. B

Q18. The Representative factor for enlarging scale is
(A) Equal to 1 (B) Always greater than 1
(C) A&B Both (D)None of them Ans. B

Q19. An object front view and top view both lie below xy line object is in which quadrant
(A) 2nd (B) 1st
(C) 3rd (D) 4th Ans. D

Q20. Which one will be the size for A3 Sheet in millimeter?
(A) 420x297 (B) 29.7x21.0
(C) 297x210 (D) 594x841 Ans. A

Section B

04X04 = 16 Marks

Q21. Define the following
a) Parallel Projection
b) Perspective projection

Ans. The observer is assumed to be stationed at finite distance from the object. The height of the buildings appears to be reducing as we move away from the observer. In perspective projection, all lines of sight start at a single point and is schematically shown in figure 3. .

Figure 2. Photographic image of a series of buildings.

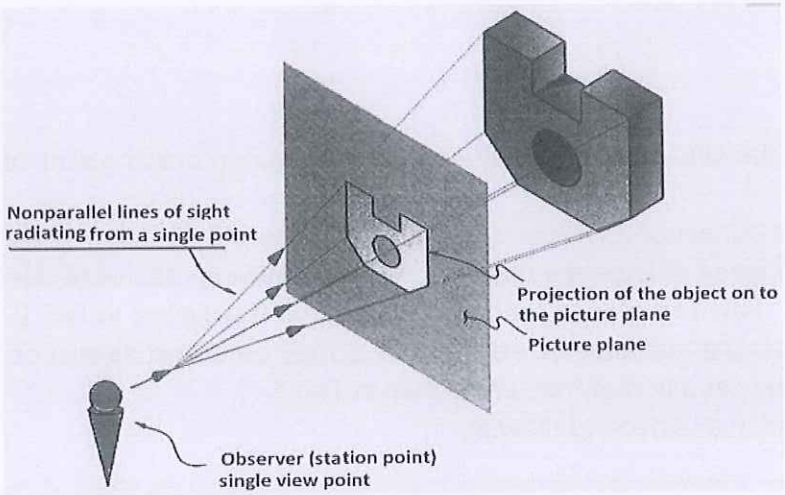


Figure 3. A schematic representation of a Perspective projection

In parallel projection, all lines of sight are parallel and is schematically represented in figure. 4. The observer is assumed to be stationed at infinite distance from the object.

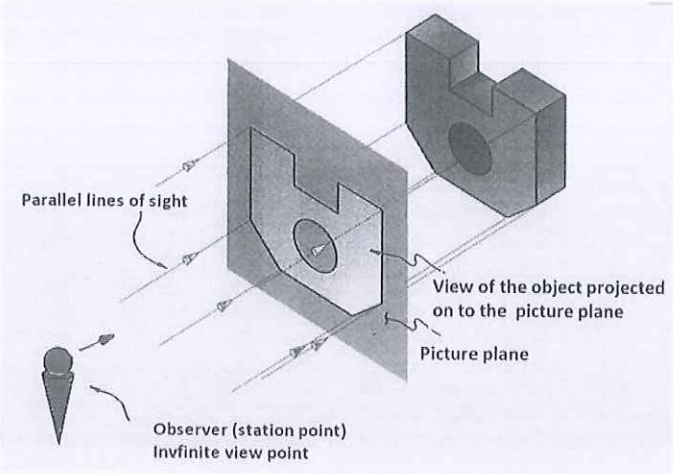


Figure 4. A schematic representation of a Parallel projection

Q22. Write down the different type of line used in engineering drawing with its application.

Ans. **Lines**

It is one important aspect of technical drawing. Lines are always used to construct meaningful drawings. Various types of lines are used to construct drawing, each line used in some specific sense. Lines are drawn following standard conventions mentioned in BIS (SP46:2003). A line may be curved, straight, continuous, segmented. It may be drawn as thin or thick. A few basic types of lines widely used in drawings are shown in Table

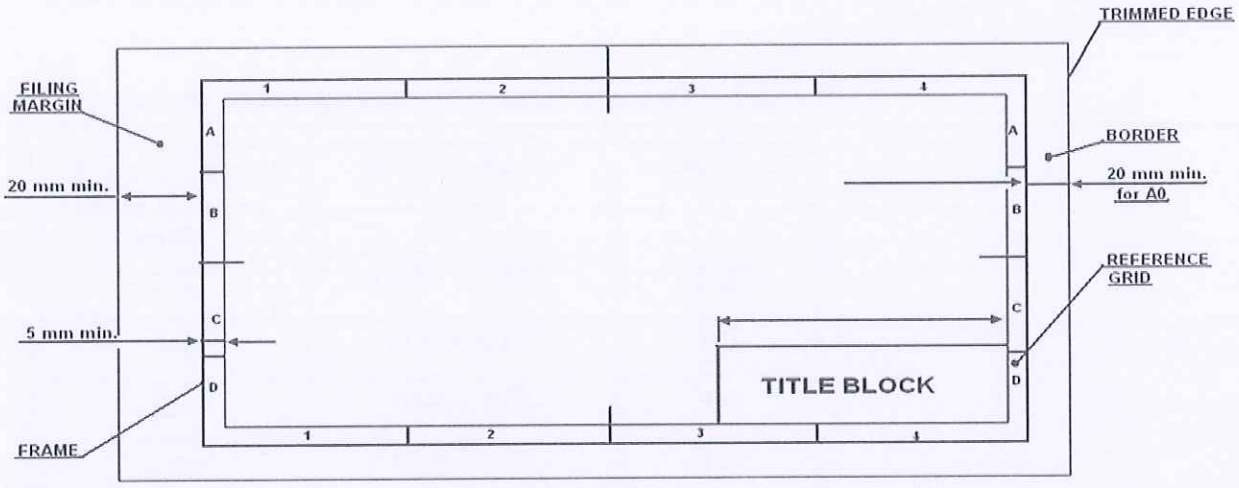
Types of lines used in engineering drawing.

Illustration	Application
Thick ———————	Outlines, visible edges, surface boundaries of objects, margin lines
Continuous thin ———————	Dimension lines, extension lines, section lines leader or pointer lines, construction lines, boarder lines
Continuous thin wavy ~~~~~~~~~~	Short break lines or irregular boundary lines – drawn freehand
Continuous thin with zig-zag —/\—/\—/\—	Long break lines
Short dashes, gap 1, length 3 mm - - - - - - - - - -	Invisible or interior surfaces
Short dashes — · — · — · — · — · — · — · —	Center lines, locus lines Alternate long and short dashes in a proportion of 6:1,
Long chain thick at end and thin elsewhere ——— - ——— - ——— - ———	Cutting plane lines

Q23. What do you mean hand drawing? Differentiate artistic drawing and Technical drawing. Draw the layout of a drawing

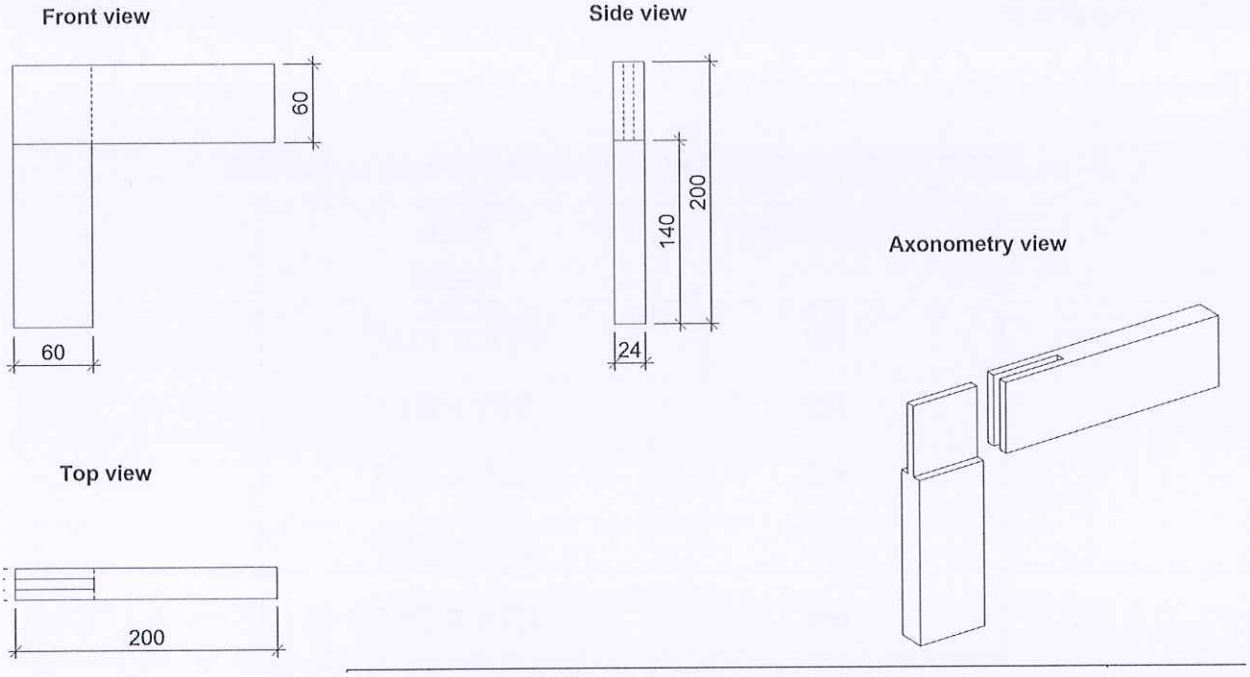
Ans Drawing is the Graphical means of expression of technical details without the barrier of a language. Engineering Drawing is the Universal Language for Engineers.

The following set of instruments are required for ensuring perfection in manual drawing:



Q 24. Draw the all possible view of Corner bridle joint.

Ans.



Q25. What do you mean hand drawing? Explain any four type of drawing accessories

Ans Drawing is the Graphical means of expression of technical details without the barrier of a language. Engineering Drawing is the Universal Language for Engineers.

The following set of instruments are required for ensuring perfection in manual drawing:

1.Drawing Board

Drawing board is made of soft wooden platens. Almost perfect planning of the working surface of the drawing board is to be ensured.

Table 1.1. Standard dimension of Engineer's Drawing Board

Designation	Length x Width (mm)	Recommended for use with sheet sizes
D0	1500 x 1000	A0
D1	1000 x 700	A1
D2	700 x 500	A2
D3	500 x 500	A3

D0 and D1 for drawing offices, for students use – D2

2.Drawing Sheet

Drawing sheet is the medium on which drawings are prepared by means of pencils or pen.

Table 1.2 Standard Sizes of Drawing sheets as per BIS

Designation	Size (mm)
A0	841 x 1189
A1	594 x 841
A2	420 x 594
A3	297 x 420
A4	210 x 297

3.Mini-drafter

This is a device used to draw parallel or inclined lines very effectively with ease. This is mounted on the top left corner of the drawing board by means of a clamping mechanism which is an integral part of the device.

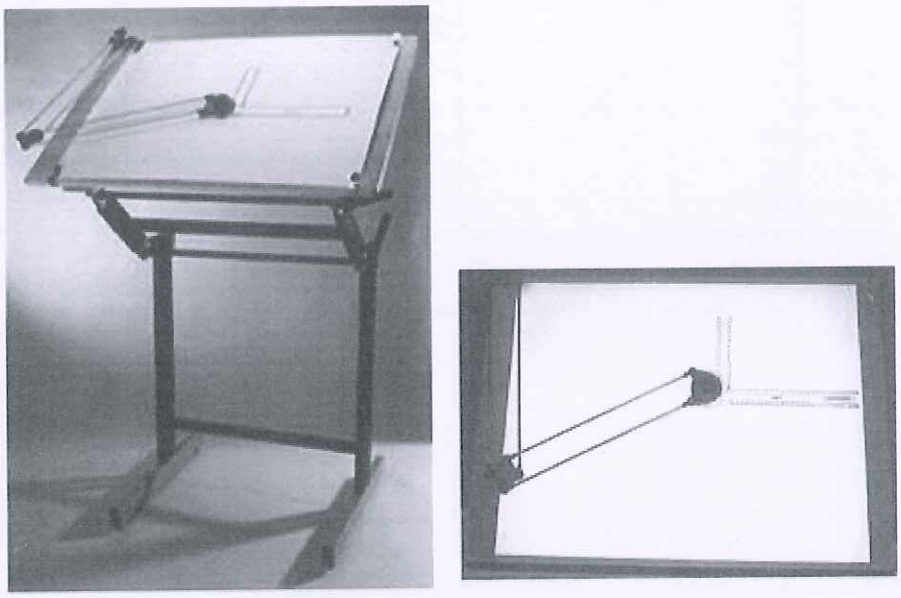


Figure 2. Photograph of a typical college level drawing table, drawing board and mini-drafter assembly

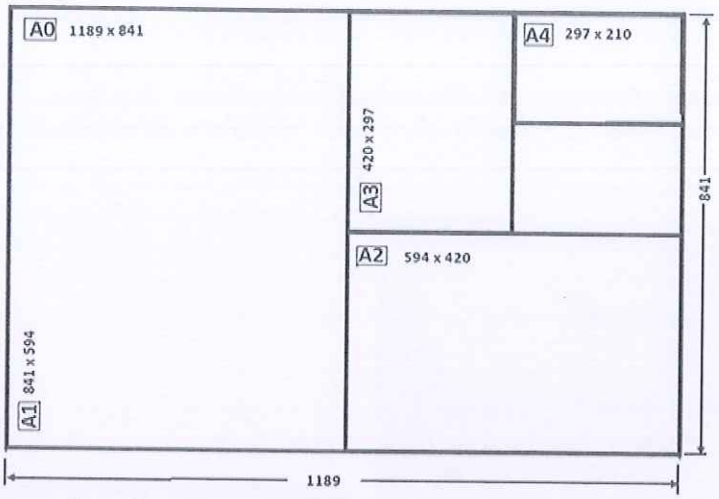
4.Set squares Set squares are a set of 45° set square and 30°-60° set-square, as shown in figure

Q26. Explain the type of drawing sheet use in Technical drawing with Proper Diagram.

Ans. **Drawing Sheet:** Drawing sheet is the medium on which drawings are prepared by means of pencils or pen.

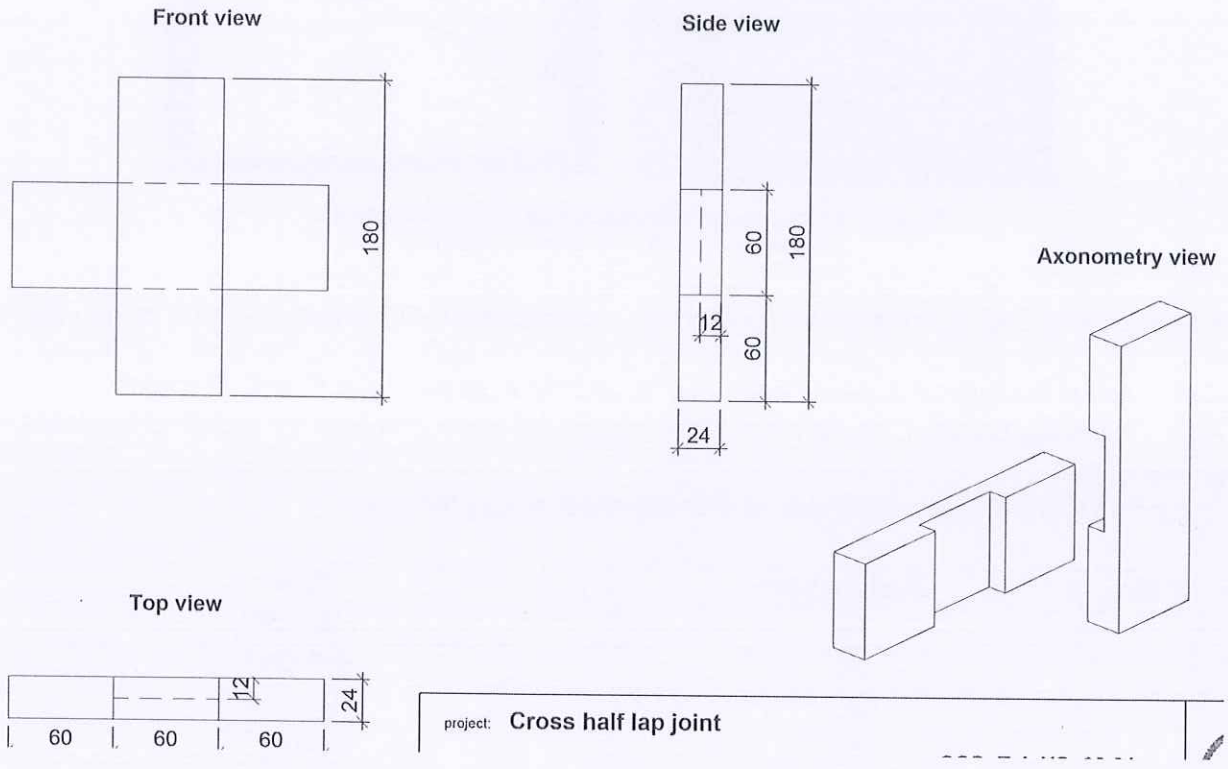
According to the BIS standard size of drawing sheet are as follows

S. No.	Designation	Size
1.	A_0	1189x841
2.	A_1	841x594
3.	A_2	594x420
4.	A_3	420x297
5.	A_4	297x210



Q 27. Draw the all possible view of cross half lap joint.

Ans.



Q 28. An object of length 2 feet is drawn on a size of 20mm calculate the RF

Ans. Representative Factor (RF) $= \frac{Drawing\ length\ of\ an\ object}{Actual\ length\ of\ an\ objecth}$

Actual length of an object = 2 feet = 2x12x25.4 mm

Drawing length = 20mm

$$Rf = \frac{20}{2x12x25.4\ mm} = 0.0328$$

Section C

04X06 = 24 Marks

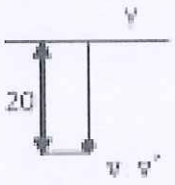
Q 29. Draw the projection

a) A point is placed 20 mm in front of VP and 20 mm below HP.

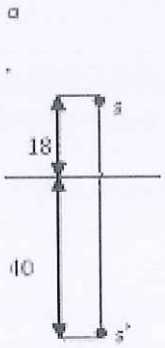
b) A point is placed 40 mm in front of VP and 18 mm above HP.

Ans.

a)



b)



Q 30. Define the Nominal Size, Basic Size & Actual size and Tolerance.

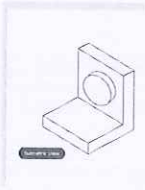
Ans. **Nominal size:** The nominal size of a dimension is the size specified in the drawing. It is usually given in the drawing as rounded of whole millimeters.

Basic size: The basic size of dimension is the size in relation to which all limits of variations are determined.

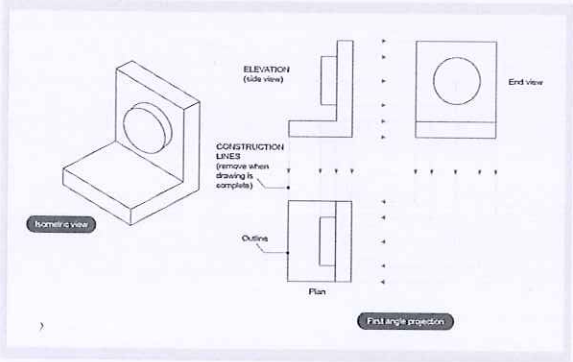
Actual size: the actual size of a dimension is its measured.

Tolerance : It is the difference between upper and lower limit .

Q31. Draw the front, top and right side view of the following Diagram in 1st angle projection?



Ans



Q 32. Define the following

a. Full size scale with example.
b. Reducing size scale an object of length with example.
c. An object of 2 feet is drawn on a size of 200mm calculate RF.

Ans. A scale is defined as the ratio of the linear dimensions of the object as represented in a drawing to the actual dimensions of the same.

- Drawings drawn with the same size as the objects are called full sized drawing.
- It is not convenient, always, to draw drawings of the object to its actual size. e.g. Buildings,
- Heavy machines, Bridges, Watches, Electronic devices etc.
- Hence scales are used to prepare drawing at
  - Full size
  - Reduced size
  - Enlarged size

$$\text{Representative Factor (RF)} = \frac{Drawing\ length\ of\ an\ object}{Actual\ length\ of\ an\ objecth}$$

Actual length of an object = 2 feet = 2x12x25.4 mm
Drawing length = 200mm

$$Rf = \frac{200}{4\text{x}12\text{x}25.4\ \text{mm}} = 0.082$$

Q33 Write short notes on absolute and relative coordinate system.

Ans. Ans. Absolute dimension

The absolute dimension refers to a zero point and is therefore also called reference. Absolute dimensioning is the basis for the CNC program creation particularly suitable. It is easy to interpret and can be easily converted into a program. Similarly, edits can easily be compared and controlled with the plan.

Relative dimensioning:

The measures always refer to the previously measured point. If you change the dimensions of the previous point, all other points will be moved automatically. This can lead to errors, but is also very handy for edits that need to be moved together. For example, in a series hole drilling, if the first hole is moved, all the other holes should also be moved. The relative dimensioning is also known as chain or incremental.