



BHARTIYA SKILL DEVELOPMENT UNIVERSITY

Registration No.:

School of Woodworking Skills
Session: 2021-22 (Summer Semester)
B. Voc. Program, 1st Semester,
2nd In-Sem. Examination

Course Code: SCS1102

Time: 1 Hour

Course Name: Power Tools

Max. Marks: 20

Instruction:

1. Answer all question from Section A, each question carries one mark.
2. Answer all question from Section B, each question carries Two mark.
3. Answer all question from Section A, each question carries Three mark.

Section – A

05X01 = 05 Marks

Q.1 Which one of the following is the accessory used for straight cut by Hand Circular Saw?

- (a) Guide Rail (b) Riving Knife
(c) Side Stops (d) None of these

Q.2 Which one of the following is the accessory used in Hand Router Machine?

- (a) Collect (b) Centering Mandrel
(c) Copying Ring (d) All of these

Q.3 Which one of the following is the diameter of cutter used in Lamello classic X?

- (a) 60 mm (b) 70 mm
(c) 100 mm (d) None of these

Q.4 Which one of the following is the maximum depth taken in Domino Machine?

- (a) 12 mm (b) 8 mm
(c) 15 mm (d) 28 mm

Q.5 Which Power tools are mostly used for Rough Cutting?

- (a) Hand Router (b) Jig Saw
(c) Circular Saw (d) Domino

Section – B

03X02 = 06 Marks

Q.6 What are the two uses of dust Collection System?

Q.7 Write the technical Specification of Hand Circular Saw?

Q.8 Write the any two application of Jig Saw?

Section – C

03X03 = 09 Marks

Q.9 Describe general Safety precaution while using Power tools?

Q.10 What are the Steps for miter cut by Circular Saw?

Q.11 Explain the steps for making 8 mm back groove with the help of Hand router?





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Answer key

School of Woodworking Skills
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Instruction:

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

05X01 = 05 Marks

Q.1 Which one of the following is the accessory used for straight cut by Hand Circular Saw?

- (a) Guide Rail (b) Riving Knife
(c) Side Stops (d) None of these (A)

Q.2 Which one of the following is the accessory used in Hand Router Machine?

- (a) Collect (b) Centering Mandrel
(c) Copying Ring (d) All of these (D)

Q.3 Which one of the following is the diameter of cutter used in Lamello classic X?

- (a) 60 mm (b) 70 mm
(c) 100 mm (d) None of these (C)

Q.4 Which one of the following is the maximum depth taken in Domino Machine?

- (a) 12 mm (b) 8 mm
(c) 15 mm (d) 28 mm (D)

Q.5 Which Power tools are mostly used for Rough Cutting?

- (a) Hand Router (b) Jig Saw
(c) Circular Saw (d) Domino (B)

Section – B

03X02 = 06 Marks

Q.6 What are the two uses of dust Collection System?

Ans: - Two uses of dust collection system are-

1. It is used for cleaning the workshop.
2. It is Sucks the dust while operating machine which helps in keeping dust free environment.

Q.7 Write the technical Specification of Hand Circular Saw?

Ans: -

Power consumption	1200 Watts (10 amps @ 120 Volts)
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Speed range	2000 to 5200 RPM (no load)
Blade Diameter	160 mm
Arbour diameter	20 mm
Depth of cut (without guide rail)	55 mm @ 90°, 43 mm @ 45°
Depth of cut (with guide rail)	50 mm
Bevel angle	0 to 45°, -1° to 47°
Weight	4.5 Kg

Q.8 Write the any two application of Jig Saw?

- Ans: - 1. The Power Source is battery and power.
2. Multiple Operations.

Section – C

03X03 = 09 Marks

Q.9 Describe general Safety precaution while using Power tools?

- Ans: - (a) Keep work area clean and well.
(b) Keep children while operating a power tools.
(c) Power tool plugs must match the outlet.
(d) Avoid body contact with earthed or grounded surfaces, such as pipes.
(e) Stay alert, watch what you are doing.
(f) Use personal protective equipment.

Q.10 What are the Steps for miter cut by Circular Saw?

- Ans: - (a) Align the guide rail on the marked line.
(b) Set the required angle on circular saw by loosening the knob.
(c) Set 5 to 7 mm more depth of cut than the thickness of work piece.
(d) Clamp the guide rail and work piece by screw clamp.
(e) Connect the machine to the dust collection system and make the miter cut.

Q.11 Explain the steps for making 8 mm back groove with the help of Hand router?

- Ans: - (a) Cut the Panel according to the size.
(b) Mark the measurement on the panel.
(c) Set the router with appropriate accessory.
(d) Set the required depth.
(e) Connect the machine to dust collector.
(f) Start the machine and do the required operation.



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Registration No.:

School of Woodworking Skills
Session: 2021-22 (Summer Semester)
B. Voc. Program, 1st Semester,
2nd In-Sem. Examination

Course Code: SCS1103

Time: 1 Hour

Course Name: Stationary Machines

Max. Marks: 20

Instruction:

1. Answer all question from Section A, each question carries one mark.
2. Answer all question from Section B, each question carries Two mark.
3. Answer all question from Section A, each question carries Three mark.

Section – A

05X01 = 05 Marks

Q.1 Which one of the following saw blade is used for both solid wood & panel?

- (a) Universal (b) Solid crosscut
(c) Solid wood along the grains (d) None of these

Q.2 Which one of the following is maximum depth of cut of Surface Planner?

- (a) 2 mm (b) 6 mm
(c) 8 mm (d) 5 mm

Q.3 What is the maximum width of work piece to be machined in thickness planer?

- (a) 300 mm (b) 630 mm
(c) 500 mm (d) None of these

Q.4 Which one of the following machines has both infeed table & work table?

- (a) Surface planer (b) Band Saw
(c) Thickness planner (d) Panel Saw

Q.5 Which one of the following machine is used for miter cut?

- (a) Surface planer (b) Panel Saw
(c) Band Saw (d) Thickness planner

Section – B

03X02 = 06 Marks

Q.6 What is the application of Panel Saw?

Q.7 What are the functions of riving knife used in Panel saw?

Q.8 What is the difference between Working table and Infeed table in NOVA F 520 machine?

Section – C

03X03 = 09 Marks

Q.9 Explain the safety precautions that kept in mind while using Stationary machines?



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Q.10 Define the any three types of blades used in Panel Saw?

Q.11 Describe the technical specification of Thicknesses planner?

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Answer Key

School of Woodworking Skills
Session: 2021-22 (Summer Semester)
B. Voc. Program, 1st Semester,
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Course Code: SCS1103

Time: 1 Hour

Course Name: Stationary Machines

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Instruction:

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2. Answer all question from Section B, each question carries Two mark.
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Section – A

05X01 = 05 Marks

Q.1 Which one of the following saw blade is used for both solid wood & panel?

- (a) Universal (b) Solid crosscut
(c) Solid wood along the grains (d) None of these (A)

Q.2 Which one of the following is maximum depth of cut of Surface Planner?

- (a) 2 mm (b) 6 mm
(c) 8 mm (d) 5 mm (C)

Q.3 What is the maximum width of work piece to be machined in thickness planer?

- (a) 300 mm (b) 630 mm
(c) 500 mm (d) None of these (B)

Q.4 Which one of the following machines has both infeed table & work table?

- (a) Surface planer (b) Band Saw
(c) Thickness planner (d) Panel Saw (A)

Q.5 Which one of the following machine is used for miter cut?

- (a) Surface planer (b) Panel Saw
(c) Band Saw (d) Thickness planner (B)

Section – B

03X02 = 06 Marks

Q.6 What is the application of Panel Saw?

Ans: - (a) It is use for straight cutting along the grains.

- (b) It is use for cross cutting.
(c) It is use for angle cut.
(d) It is use for miter cut.
(e) It is use to make a groove.



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Q.7 What are the functions of riving knife used in Panel saw?

Ans: - (a) Avoids the kick back.

(b) It also prevents contact with the rising gear rim.

(c) It decrease the tension in the wood while cutting.

Q.8 What is the difference between Working table and Infeed table in NOVA F 520 machine?

Ans: - **Infeed table:** - This table through work piece will passed away first to the direction of the cutter. This table can move till 8 mm down.

Working table: - After passing away from infeed table and the cutter work piece came to working table. This table cannot move it is used to provide reference to the work piece.

Section – C

03X03 = 09 Marks

Q.9 Explain the safety precautions that kept in mind while using Stationary machines?

Ans: - (a) Always wear safety shoes.

(b) Always wear short sleeves.

(c) Wear hearing protection, eye protection, nose protection.

(d) Do not set the blade too high.

(e) Always know where the emergency switch.

(f) Do not stand behind the machine while machine working.

(g) Always close extraction hood.

Q.10 Define the any three types of blades used in Panel Saw?

Ans: - 1. Universal blade: - This blade is used for cutting both solid wood and panel wood. This blade has 48 tooth.

2. Solid wood cross cut: - This blade is used for cutting solid wood cross cuts. This blade has 96 tooth.

3. Solid wood along the grain: - this blade is used for cutting solid wood along the grain. This blade has 28 tooth.

Q.11 Describe the technical specification of Thicknesses planner?

Ans: -

✓ Worktable size – 640*1000 mm.

✓ Working width – 630 mm.

✓ Cutter block diameter – 120 mm.

✓ Max. depth of cut in one stroke – 8 mm.

✓ Min. length of the piece to be machined – 260 mm.

✓ Min. width of the piece to be machined – 10 mm.

✓ Cutter block speed – 4500 rpm.



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Registration No.:

School of Woodworking Skills
Session: 2021-22 (Summer Semester)
B. Voc. Program, 1st Semester,
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Course Code: SCS1104

Time: 1 Hour

Course Name: Assembly and Fittings

Max. Marks: 20

Instruction:

1. Answer all question from Section A, each question carries one mark.
2. Answer all question from Section B, each question carries Two mark.
3. Answer all question from Section A, each question carries Three mark.

Section – A

05X01 = 05 Marks

Q.1 Which one of the following is permanent assembly?

- (a) Lamello joints (b) Fastening Screw
(c) Lamello joints with glue (d) Dowel

Q.2 Which one of the following signs is helpful in assembly?

- (a) Triangle (b) Cross
(c) Zig Zag lines (d) Snake line

Q.3 Which one of the following is the example of a joint that can be reassembled?

- (a) Dowel joint (b) Biscuit joint
(c) Screw (d) All of the above

Q.4 Lamello and Domino biscuit are made by....?

- (a) Pine wood (b) Beach wood
(c) Acacia wood (d) Teak wood

Q.5 Which one of the following machine we use for domino 5*30?

- (a) Jig Saw (b) Classic X
(c) Domino (d) Zeta P2

Section – B

03X02 = 06 Marks

Q.6 What is a butt joint. Write down the types of butt joint?

Q.7 What are the points that should be considered while selecting wood for assembly?

Q.8 Explain the significance is helpful for assembly?

Section – C

03X03 = 09 Marks

Q.9 Write down the work plan for making a joint that contains cutting and chiseling?

Q.10 What is dry gluing process and why do we use this process before gluing?

Q.11 Write down the names of four common striking and tightening tools and describe them?



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Answer key

School of Woodworking Skills
Session: 2021-22 (Summer Semester)
B. Voc. Program, 1st Semester,
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Course Code: SCS1104

Time: 1 Hour

Course Name: Assembly and Fittings

Max. Marks: 20

Instruction:

1. Answer all question from Section A, each question carries one mark.
2. Answer all question from Section B, each question carries Two mark.
3. Answer all question from Section A, each question carries Three mark.

Section – A

05X01 = 05 Marks

Q.1 Which one of the following is permanent assembly?

- (a) Lamello joints (b) Fastening Screw
(c) Lamello joints with glue (d) Dowel (C)

Q.2 Which one of the following signs is helpful in assembly?

- (a) Triangle (b) Cross
(c) Zig Zag lines (d) Snake line (A)

Q.3 Which one of the following is the example of a joint that can be reassembled?

- (a) Dowel joint (b) Biscuit joint
(c) Screw (d) All of the above (C)

Q.4 Lamello and Domino biscuit are made by....?

- (a) Pine wood (b) Beach wood
(c) Acacia wood (d) Teak wood (B)

Q.5 Which one of the following machine we use for domino 5*30?

- (a) Jig Saw (b) Classic X
(c) Domino (d) Zeta P2 (C)

Section – B

03X02 = 06 Marks

Q.6 What is a butt joint. Write down the types of butt joint?

Ans: - Butt Joint: - The end of a piece of wood is butted against another piece of wood. This is the simplest and weakest joint.

- (a) T-butt.
(b) End-to-end butt.
(c) T-lap.
(d) Miter butt.



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(e) Edge-to-edge butt.

Q.7 What are the points that should be considered while selecting wood for assembly?

Ans: - before combining the work piece we must check the following: -

- ✓ Wood defects (branches, resins etc.)
- ✓ Surface texture.
- ✓ Color difference.
- ✓ Knots.
- ✓ Fiber coarse and tree ring coarse.

Q.8 Explain the significance is helpful for assembly?

Ans: - Triangle sign is used for assembly purpose. We used this sign as an identification of the part. This triangle making process follows some following points: -

- (a) We always make triangle according to front view of the drawing.
- (b) If it not possible to make triangle sign on all front view than only we go for top or side view.
- (c) Triangle sign should always come on the corner of work piece.

Section – C

03X03 = 09 Marks

Q.9 Write down the work plan for making a joint that contains cutting and chiseling?

Ans: -

- ✓ Drawing reading.
- ✓ Material verification.
- ✓ Triangle sign marking.
- ✓ Cutting by saw.
- ✓ Chiseling by saw.
- ✓ Final cutting.

Q.10 What is dry gluing process and why do we use this process before gluing?

Ans: - Process in which we follow whole gluing process without using glue it is called dry gluing process.

We used this process for following purpose.

- ✓ To check errors in the assembly.
- ✓ To check the positioning of the pieces.
- ✓ To check all availability.

Q.11 Write down the names of four common striking and tightening tools and describe them?



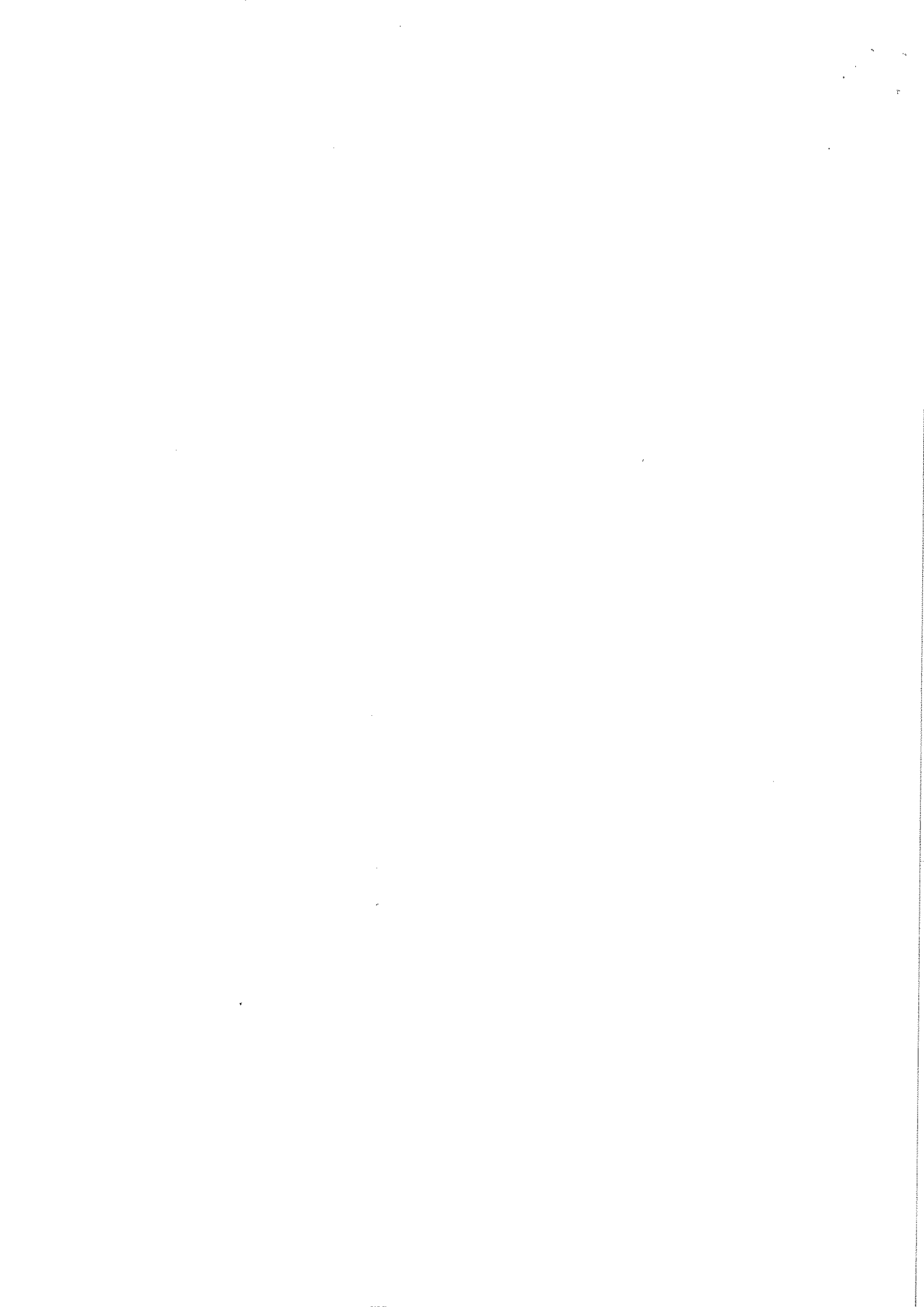
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Ans: - **Hammer:** - A claw hammer consisting of a head and a wood or plastic handle, is used to drive nails into wood and remove nails.

Nails: - Common nails come in a wide variety of shapes and sizes.

Screw driver: - Screwdrivers, consisting of a handle, metal blade, and tip are used to drive screws.

Screws: - Screws are used to provide more holding power than nails and when a project requires disassembly they come in varying lengths and Gauge.





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Registration No.

School of Woodworking Skills

Session: 2020-21 (Summer Semester)

B. Voc. Program, 1st Semester,

2nd In-Sem. Examination

Course Code: SCS1105

Time: 1 Hour

Course Name: Carpenter Materials

Max. Marks: 20

Instruction:

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

Section A

05X01 = 05 Marks

- Q. 1 In the given option which sandpaper is best for roughing
(A) P220 (B) P180
(C) P60 (D) P80
- Q. 2 Which one is abrasive particle material for sand paper?
(A) Al₂O₃ (B) Sic
(C) A&B Both (D) None of them
- Q. 3 Which part of the trunk is responsible for the production of new wood?
(A) Pith (B) Cambium
(C) Sapwood (D) Bast
- Q. 4 In which season wood grows very quickly?
(A) Summer (B) Autumn
(C) Spring (D) None of these
- Q. 5 Adhesive that sets two components through a chemical reaction
(A) Dispersion adhesive (B) Hot melt adhesive
(C) Contact adhesive (D) Reaction adhesive

Section B

03X02 = 06 Marks

- Q. 6 What do you understand by abrasive? Classify it.
- Q. 7 What do you understand by Seasoning? Write down the names of seasoning method
- Q. 8 What are the procedure to do the sanding.



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Section C

03X03 = 09 Marks

- Q. 9 Discuss hot melt adhesives, their properties and processing instructions in detail.
- Q. 10 Draw the labelled diagram of the tree.
- Q. 11 What do you understand by Sandpaper? Discuss about grit size and their significance.

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Answer Key

School of Woodworking Skills

Session: 2020-21 (Summer Semester)

B. Voc. Program, 1st Semester,

2nd In-Sem. Examination

Course Code: SCS1105

Time: 1 Hour

Course Name: Carpenter Materials

Max. Marks: 20

Instruction:

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

Section A

05X01 = 05 Marks

- Q. 1 In the given option which sandpaper is best for roughing
(A) P220 (B) P180
(C) P60 (D) P80 Ans. C
- Q. 2 Which one is abrasive particle material for sand paper?
(A) Al₂O₃ (B) Sic
(C) A&B Both (D) None of them Ans. C
- Q. 3 Which part of the trunk is responsible for the production of new wood?
(A) Pith (B) Cambium
(C) Sapwood (D) Bast Ans. B
- Q. 4 In which season wood grows very quickly?
(A) Summer (B) Autumn
(C) Spring (D) None of these Ans. C
- Q. 5 Adhesive that sets two components through a chemical reaction
(A) Dispersion adhesive (B) Hot melt adhesive
(C) Contact adhesive (D) Reaction adhesive Ans. D

Section B

03X02 = 06 Marks

- Q. 6 What do you understand by abrasive? Classify it.
Ans. An abrasive is a material, often a mineral, that is used to shape or finish a workpiece through rubbing which leads to part of the workpiece being worn away by friction.





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While finishing a material often means polishing it to gain a smooth, reflective surface, the process can also involve roughening as in satin, matte or beaded finishes.

Q. 7 What do you understand by Seasoning? Write down the names of seasoning method

Ans. Wood can contain water in two different ways. If the cell walls are saturated with water, the cell cavities fill with water. This water is called free or capillary water. The proportion of this unbound water is usually very high, but is relatively easy to remove. The water that is bound in the cell walls is called bound water. This is difficult to remove, and this explains the drying speed as the degree of dryness of the wood increases. The area in which there is no free water in the wood is called the fiber saturation area. Depending on the type of wood, it is between 22 and 35% wood moisture.

When moisture is absorbed or released below this area, the wood swells or shrinks, while changes in wood moisture above the fiber saturation area cause changes in shape only to a very small extent.

1. Natural Seasoning
2. Synthetic Seasoning

Q. 8 What are the procedure to do the sanding.

Ans. When fine sanding, always sand exactly in the longitudinal direction of the wood and not across the longitudinal direction

- When working with the sanding block, make sure that the sandpaper is tight against the sanding block

Start sanding with coarse sandpaper (deep grit number) and end with fine sandpaper (high grit number)

- Skip at most a grit number if you want to sand with coarse sandpaper after a rough sanding
- Adjust the abrasives to the material to be sanded (open scatter for stuffing materials and closed.
- Scatter for normal materials) longitudinal direction
- Sand with the lowest possible sanding pressure
- Vacuum the sanding dust so that less dust is released into the air, the sanding paper is not clogged and there are no traces of fire
- Regularly tap the abrasive to prevent the abrasive from clogging
- When machine grinding consider the direction of rotation i
- the sanding belt (arrows on the back)
- Set the sanding belt speed depending on the material hardness and sanding process (e.g. wood sanding 24 m/s, paint finish 12 m / s)





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03X03 = 09 Marks

Q. 9 Discuss hot melt adhesives, their properties and processing instructions in detail.

Ans. **Hot melt adhesives**

Hot melt adhesives are used in edge banding machines and hot melt glue guns in granulate or cartridge form. Hot melt adhesives are heated and applied in a molten state. They harden by cooling from the hot liquid to the cool, hard state.

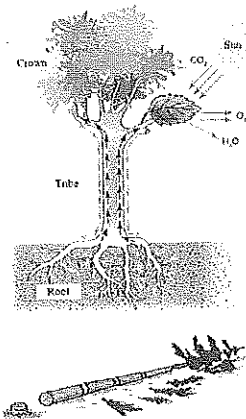
Properties of hot melt adhesives

- Hot melt adhesives harden very quickly
- Joints bonded with hot melt adhesives can be loosened again by heating (exception: PUR hot melt adhesives)
- Rapid adhesives are not moisture-resistant (Exception: PUR hot melt adhesives)

Processing instructions

- The temperature of the adhesive must remain hot until the parts are completely pressed together. If the adhesive cools down beforehand the bond will not hold.
- The melting temperature must correspond exactly to the specifications of the adhesive manufacturer. Melting temperatures that are too high decompose («burn») the adhesive.

Q. 10 Draw the labelled diagram of the tree.



Q. 11 What do you understand by Sandpaper? Discuss about grit size and their significance.

Ans. 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).



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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



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Registration No.....

School of Woodworking Skills

Session: 2021-22 (Summer Semester)

B. Voc. Program, 1st Semester,
2nd In-Sem. Examination

Course Code: SCS1106

Course Name: Hand Drawing

Time: 1 Hour

Max. Marks: 20

Instruction:

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

Section A

05X01 = 05 Marks

- Q. 1 An object is in front of vertical plane and above horizontal plane object lies in
(A) 1st quadrant (B) 2nd quadrant
(C) 3rd quadrant (D) None of them
- Q. 2 Front view is known as
(A) Elevation (B) Depression
(C) Plan (D) None of them
- Q. 3 2 inch is equivalent to
(A) 2.5 cm (B) 1 feet
(C) 50.8 mm (D)None of them
- Q. 4 An object lies above horizontal plane but behind vertical plane it lies in which quadrant
(A) 2nd (B) 1st
(C) 3rd (D) 4th
- Q. 5 What is the significance of Continuous thin line in technical drawing?
(A) Dimension line of the object (B) Cutting section
(C) A&B Both (D) line of symmetry

Section B

03X02 = 06 Marks

- Q. 6 What is Perspective projection? Explain with Diagram.
- Q. 7 Draw the symbol of first and third angle projection.
- Q. 8 Calculate the RF of an object of length 4 feet is drawn on a size of 200mm.



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Section C

03X03 = 09 Marks

- Q. 9 Explain the difference between 1st angle and 3rd angle projection.
- Q. 10 A point is placed 20 mm in front of vertical plane and 40 mm above horizontal plane. draw the projection of a point.
- Q. 11 Define scale in drawing and its significance with example.



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Answer Key

School of Woodworking Skills

Session: 2021-22 (Summer Semester)

B. Voc. Program, 1st Semester,

2nd In-Sem. Examination

Course Code: SCS1106

Course Name: Hand Drawing

Time: 1 Hour

Max. Marks: 20

Instruction:

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

Section A

05X01 = 05 Marks

- Q. 1 An object is in front of vertical plane and above horizontal plane object lies in
(A) 1st quadrant (B) 2nd quadrant
(C) 3rd quadrant (D) None of them Ans. A
- Q. 2 Front view is known as
(A) Elevation (B) Depression
(C) Plan (D) None of them Ans. A
- Q. 3 2 inch is equivalent to
(A) 2.5 cm (B) 1 feet
(C) 50.8 mm (D) None of them Ans. C
- Q. 4 An object lies above horizontal plane but behind vertical plane it lies in which quadrant
(A) 2nd (B) 1st
(C) 3rd (D) 4th Ans. A
- Q. 5 What is the significance of Continuous thin line in technical drawing?
(A) Dimension line of the object (B) Cutting section
(C) A&B Both (D) line of symmetry Ans. A

Section B

03X02 = 06 Marks

Q. 6 What is Perspective projection? Explain with Diagram.

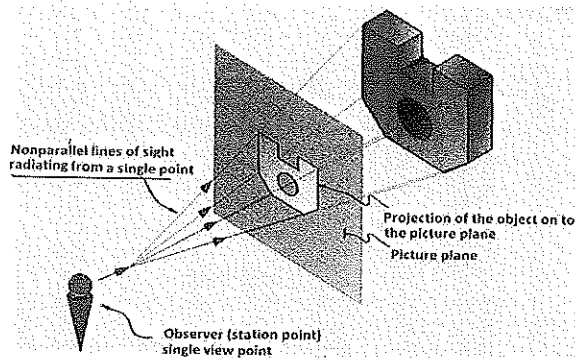
Ans. Perspective projection



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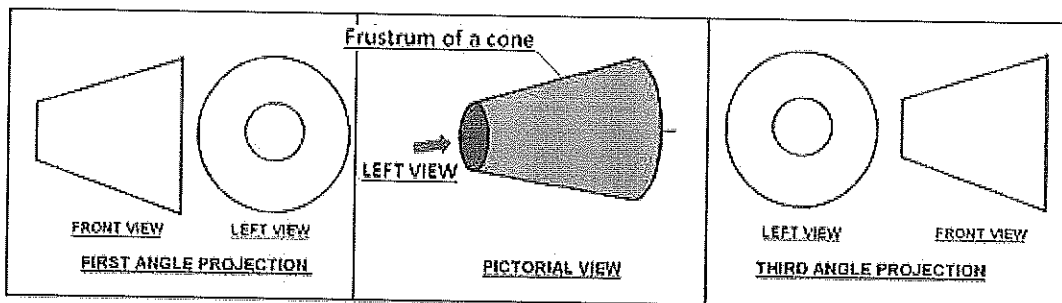
Distance from the observer to the object is finite and the object is viewed from a single point projectors are not parallel.

Perspective projections mimic what the human eyes see, however, they are difficult to draw.



Q. 7 Draw the symbol of first and third angle projection.

Ans.



Q. 8 Calculate the RF of an object of length 4 feet is drawn on a size of 200mm.

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

Actual length of an object = 4 feet = $4 \times 12 \times 25.4$ mm

Drawing length = 200mm

$$Rf = \frac{200}{4 \times 12 \times 25.4 \text{ mm}} = 0.164$$



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Section C

03X03 = 09 Marks

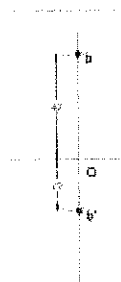
Q. 9 Explain the difference between 1st angle and 3rd angle projection.

Ans.

First angle projection	Third-angle projection
Object is kept in the first quadrant.	Object is assumed to be kept in the third quadrant.
Object lies between observer and the plane of projection.	Plane of projection lies between the observer and the object.
The plane of projection is assumed to be non-transparent.	The plane of projection is assumed to be transparent.
Front (elevation) view is drawn above the XY line	Front (elevation) view is drawn below the XY line
Top (plan) view is drawn below the XY line	Top (plan) view is drawn above the XY line
Left view is projected on the right plane and vice versa	Left view is projected on the left plane itself.
Followed in India, European countries	Followed in USA

Q. 10 A point is placed 20 mm in front of vertical plane and 40 mm above horizontal plane. draw the projection of a point.

Ans.



Q. 11 Define scale in drawing and its significance with example.

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.



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- 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

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

Actual length of an object = 4 feet = $4 \times 12 \times 25.4$ mm

Drawing length = 200mm

$$Rf = \frac{200}{4 \times 12 \times 25.4 \text{ mm}} = 0.164$$