BHARTIYA SKILL DEVELOPMENT UNIVERSITY

Registration No.: .....

Set – A

School of Woodworking Skills

Session: 2021-22 (Summer Semester)

B. Voc. Program, 1st Semester,

End-Sem. Examination

Course Code: SCS1101 **Time: 2 Hour**

Course Name: Hand Skill & Transfer of Measurements **Max. Marks: 50**

Instruction:

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

Section – A

10X01 = 10 Marks

Q1. Which one of the following processes is used to remove moisture from wood?

(A) Gluing (B) Seasoning (C) Cutting (D) None of these

Q2. Which one of the following planners is used to plane round wood piece?

(A) Jack planer (B) Spoke shave (C) Both of these (D) None of these

Q3. How many Rivets are used in double riveted lap joint?

(A) 1 (B) 2 (C) 3 (D) 4

Q4. Which one of the following signs is helpful in assembly?

(A) zig zag lines (B) snack line (C) tringle (D) cross

Q5. Which one of the following pencils is used for light measurement?

(A) 7mm (B) 0.7mm (C) 2mm (D) HB

Q6. Which one of the following is use of marking gauge?

(A) Mark work piece equal (B) To sharp pencil (C) Mark circle (D) None of these

Q7. Which one of the following is an angle of jack planer blade?

(A) 10-20 (B) 30-35 (C) 35-40 (D) 40-50

Q8. Which one of the following joint is used to make drawer?

(A) Butt joint (B) Dovetail joint (C) Both of these (D) None of these

Q9. Which one of the following side is used to transfer measurement on the work piece?

(A) Length side (B) Width side (C) Thickness side (D) None of these

Q10. Which one of the following is used for measurement transfer?

(A) Roll meter (B) Try square (C) Marking gauge (D) None of these

Section – B

04X04 = 16 Marks

Q11. Explain light measurement and outer measurement.

Q12. Explain region behind tooth of hand saw are alternative with a suitable diagram of hand saw.

Q13. Explain the significance of triangle sign with an example.

Q 14. List of hand tools used in carpentry.

Section – C

04X06 = 24 Marks

Q.15. Explain Marking Gauge with a suitable diagram

Q.16. Explain the parts of jack planer with a suitable diagram.

Q.17. Describe the use of sanding cork.

Q18. Prepare a work plan and tool list for Dovetail Joint.

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

Answer key....

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(A) 1 (B) 2 (C) 3 (D) 4 (B)

Q4. Which one of the following signs is helpful in assembly?

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Q5. Which one of the following pencils is used for light measurement?

(A) 7mm (B) 0.7mm (C) 2mm (D) HB (B)

Q6. Which one of the following is use of marking gauge?

(A) Mark work piece equal (B) To sharp pencil (C) Mark circle (D) None of these (A)

Q7. Which one of the following is an angle of jack planer blade?

(A) 10-20 (B) 30-35 (C) 35-40 (D) 40-50 (B)

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Q9. Which one of the following side is used to transfer measurement on the work piece?

(A) Length side (B) Width side (C) Thickness side (D) None of these (B)

Q10. Which one of the following is used for measurement transfer?

(A) Roll meter (B) Try square (C) Marking gauge (D) None of these (A)

Section – B

04X04 = 16 Marks

Q11. Explain light measurement and outer measurement.

Ans. **Light measurement** - Light measurement is also known as Inner measurement. This measurement is always done after outer measurement. During this measurement we used 0.7 mm pencil

Outer measurement - this measurement is out to out measurement this is done with the use of 2mm pencil.

Q12. Explain region behind tooth of hand saw are alternative with a suitable diagram of hand saw.
Ans. If the tooth of hand saw is same as the thickness of the blade than during the cutting it will stuck in to the work piece due to leak of clearance. That is the only reason that tooth of circular saw always having alternate shape so that they can make proper clearance to the saw to move freely on the work piece.

Q13. Explain the significance of triangle sign with an example.
Ans. Tringle sign is used for assembly purpose. We used this sign as an identification of the part. This tringle making process follows the same following points:

1. We always make tringle according to front of the drawing.
2. If it is not possible to make tringle sign on all parts in front view than only we go for top or side view.
3. This is not necessary to complete the tringle sign always (in case of less no. of component)
4. Tringle sign should always come on the corners of work piece.

EXAMPLE:

Q 14. List of hand tools used in carpentry.
Ans.

1. Folding ruler	0-2 Meter
2. Steel ruler	0-150 mm
3. Roll Meter	0-3 Meter
4. Try square	
5. Marking gauge	
6. Hammer	Nylon, Iron
7. Clamps	
8. Chisel	8mm, 12mm, 16mm, 26mm, 32mm
9. Hand saw	
10. Sanding Cork	
11. Jack planer	

Section – C

04X06 = 24 Marks

Q.15. Explain Marking Gauge with a suitable diagram

Ans. A marking gauge, also known as a scratch gauge, it 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. The gauge consists of a beam, a headstock, and a scribing or marking implement, typically a pin, knife, pen or wheel. The headstock slides along the beam, and is locked in place by various means: a locking screw, cam lever, or a wedge. The marking implement is fixed to one end of the beam.

Q.16. Explain the parts of jack planer with a suitable diagram.

Ans.

1. Leaver cap - Leaver cap is used to hold all the assembly of iron cap and cutting blade.
2. Wedge - Wedge is mainly responsible for the chip breaking while cutting.
3. Blade - Blade is mounted in between planer and the cap is used to cut the material and this blade is adjustable in depth.
4. Knob - Knob is mounted in front of the planer it is mainly used to hold the planer properly.
5. Handle - Handle is mounted at the end of this planer this is to push and pull planer and also to hold it properly.
6. Adjustable lever - This lever is used adjust blade tilting.
7. Bottom - This is made of cast iron and used to provide perfect holding on surface.

Q.17. Describe the use of sanding cork.

Ans. A sanding block is a block used to hold sandpaper. In its simplest form, it is a block of wood or cork with one smooth flat side. The user wraps the sandpaper around the block, and olds it in place (by inserting a fitted piece of cardboard under the sandpaper, one can soften the impact on the wood and protect against tears or uneven wear on the sandpaper). Sanding blocks are helpful because they prevent the " waves " created by plain sandpaper.

Fancier versions use clips, teeth or clamps to hold the paper in place. Commercial versions can be constructed of various materials. They are usually sized to hold a quarter or half sheet of sandpaper. Some versions use the sandpaper belts intended for a power belt sander. Construction workers often use commercial one - piece sanding blocks consisting of a foam plastic block with an abrasive coating.

Q18. Prepare a work plan and tool list for Dovetail Joint.

Ans. **Work plan**

1. Drawing reading.
2. Material verification.
3. Part identification Triangle sign
4. Measurement transfer.
5. Sawing operation.
6. Chiseling operation.
7. Measurement transfer to another work piece.
8. Sawing operation.
9. Chiseling operation.
10. Inspection report.
11. Check work piece quality.

Tool List –

1. Folding ruler	0-2 Meter
2. Steel ruler	0-150 mm
3. Roll Meter	0-3 Meter
4. Try square	
5. Marking gauge	
6. Hammer	Nylon
7. Clamps	2x
8. Chisel	8mm, 12mm, 16mm, 26mm, 32mm
9. Hand saw	

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Set – B

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Section – A

10X01 = 10 Marks

Q1. How many Rivets are used in double riveted lap joint?

(A) 1 (B) 2 (C) 3 (D) 4

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

(A) zig zag lines (B) snack line (C) tringle (D) cross

Q3. Which one of the following pencils is used for light measurement?

(A) 7mm (B) 0.7mm (C) 2mm (D) HB

Q.4. Which one of the following is an angle of jack planer blade?

(A) 10-20 (B) 30-35 (C) 35-40 (D) 40-50

Q.5. Which one of the following joint is used to make drawer?

(A) Butt joint (B) Dovetail joint (C) Both of these (D) None of these

Q.6. Which one of the following is used for measurement transfer?

(A) Roll meter (B) Try square (C) Marking gauge (D) None of these

Q.7. Which one of the following processes is used to remove moisture from wood?

(A) Gluing (B) Seasoning (C) Cutting (D) None of these

Q.8. Which tool is used to cut wood in round shape?

(A) Indian Hand Saw (B) Compass Saw (C) Japanese Hand Saw (D) Hack Saw

Q.9. The sharpening angle of the chisel should be:

(A) 10-20 Degree (B) 30-35 Degree (C) 40-45 Degree (D) 50-60 Degree

Q.10. How much gap should be maintained in between cutting knife and the cap iron (top blade) in jack planer?

(A) 25mm (B) 2.5mm (C) 5mm (D) No gap

Section – B

04X04 = 16 Marks

Q.11. Write down the names of three cutting tools and define them.

Q.12. What is a try Square Mention its uses?

Q13. Explain the significance of triangle sign with an example.

Q 14. List of hand tools used in carpentry.

Section – C

04X06 = 24 Marks

Q.15. What is a carpenter triangle and why do we use it.

Q.16. Explain the parts of jack planer with a suitable diagram.

Q.17. Describe the use of sanding cork.

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Answer key.....

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(A) 25mm (B) 2.5mm (C) 5mm (D) No gap (B)

Section – B

04X04 = 16 Marks

Q.11. Write down the names of three cutting tools and define them.

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.

Back saw –

A backsaw is commonly used in cutting joints. It is frequently positioned in a miter box (device used to guide the angle of a cut) to make very accurate cuts in smooth lumber. This saw is similar to a crosscut saw, but it has a reinforced, metal spine and finer cutting teeth.

Japanese pull saw –

A Japanese pull saw is a cutting tool used to cut wooden pieces. usually cuts materials in the backward stroke.

Q.12. What is a try Square Mention its uses.

Ans. A try square is a hand tool that comes under the category of marking tools. It is commonly used for

(A) Transferring straight lines to the work place.

(B) For checking the flatness of any surface.

(C) To Check 90 ° of the work piece.

Q13. Explain the significance of triangle sign with an example.

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9. Hand saw	
10. Sanding Cork	
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Section – C

04X06 = 24 Marks

Q.15. What is a carpenter triangle and why do we use it.

Ans. We use symbols to combine work piece together. The symbol that is used to combine is called triangle sign. The aim of drawing symbol is that the individual parts of the work are evaluated at the same time and by each person. Sometimes we use the left part instead of the right part and the top part instead of the bottom because there are several identical pieces of the same size, so we need to number them accordingly and this can be done by making triangle sign. The sign should not be too small. It should be clearly visible. It should be drawn from the bottom to the top and from front to back

Q.16. Explain the parts of jack planer with a suitable diagram.

Ans.

1. Leaver cap - Leaver cap is used to hold all the assembly of iron cap and cutting blade.
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4. Try square	
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School of Woodworking Skills

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End - Sem. Examination

Course Code: SCS1102 **Time: 2 Hours**

Course Name: Power Tools **Max. Marks: 50**

Instruction: (if any)

Section – A

10X01 = 10 Marks

Q.1 Which one of the following is maximum depth of circular saw without track?

(a) 45 mm (b) 65 mm

(c) 55 mm (d) 60 mm

Q.2 Which one of the following is maximum angle in circular saw?

(a) 47^0 (b) 41^0

(c) 43^0 (d) 50^0

Q.3 Which one of the following is maximum depth of hand router OF 1400 EBQ?

(a) 6 mm (b) 4 mm

(c) 8 mm (d) None of these

Q.4 Which one of the following machine that can be used to make pocket?

(a) Circular Saw (b) Jig Saw

(c) Hand Router (d) Lamello

Q.5 Which one of the following accessories is used while working on an angular work piece with Lamello machine?

(a) Spacer (b) Guide rail

(c) None of these (d) Angular Support

Q.6 Which one of the following is used for rough sanding?

(a) P80 (b) P120

(c) P280 (d) P180

Q.7 Which one of the following is the routing depth taken while using 4 mm Domino cutter?

(a) 28 mm (b) 12 mm

(c) 15 mm (d) 20 mm

Q.8 Which one of the following is the power tools used with guide rail fir cutting?

(a) Hand Router (b) Hand Circular Saw

(c) Jig Saw (d) Domino

Q.9 Which one of the following is the angular range of hand Circular Saw?

(a) 1 to 45 (b) -1 to -47

(c) -1 to -45 (d) None of these

Q.10 Which one of the following is the diameter of cutter used in Lamello X?

(a) 60 mm (b) 70 mm

(c) None of these (d) 100 mm

Section – B

04X04 = 16 Marks

Q.11 What are the two ways of guiding of Jig Saw? Explain them.

Q.12 Explain the Pendulum Adjustment in Jig Saw?

Q.13 Explain System accessories of circular saw TS55 REBQ plus?

Q.14 Define the System accessories of router OF 1010 EBQ?

Section – C

04X06 = 24 Marks

Q.15 Explain technical data of the circular saw and also explain technical specification of circular saw blade?

Q.16 What is Domino machine? Draw the sketches of domino dowels and mention the all different sizes of domino dowels.

Q.17 What are the benefits for using the dust collector while working with Power tools?

Q.18 What are the steps for cutting panel by circular saw using guide rail?

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Answer key.....

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(a) 45 mm (b) 65 mm

(c) 55 mm (d) 60 mm (C)

Q.2 Which one of the following is maximum angle in circular saw?

(a) 47^0 (b) 41^0

(c) 43^0 (d) 50^0 (A)

Q.3 Which one of the following is maximum depth of hand router OF 1400 EBQ?

(a) 6 mm (b) 4 mm

(c) 8 mm (d) None of these (A)

Q.4 Which one of the following machine that can be used to make pocket?

(a) Circular Saw (b) Jig Saw

(c) Hand Router (d) Lamello (C)

Q.5 Which one of the following accessories is used while working on an angular work piece with Lamello machine?

(a) Spacer (b) Guide rail

(c) None of these (d) Angular Support (A)

Q.6 Which one of the following is used for rough sanding?

(a) P80 (b) P120

(c) P280 (d) P180 (A)

Q.7 Which one of the following is the routing depth taken while using 4 mm Domino cutter?

(a) 28 mm (b) 12 mm

(c) 15 mm (d) 20 mm (D)

Q.8 Which one of the following is the power tools used with guide rail for cutting?

(a) Hand Router (b) Hand Circular Saw

(c) Jig Saw (d) Domino (B)

Q.9 Which one of the following is the angular range of hand Circular Saw?

(a) 1 to 45 (b) -1 to -47

(c) -1 to -45 (d) None of these (D)

Q.10 Which one of the following is the diameter of cutter used in Lamello X?

(a) 60 mm (b) 70 mm

(c) None of these (d) 100 mm (D)

Section – B

04X04 = 16 Marks

Q.11 What are the two ways of guiding of Jig Saw? Explain them.

Ans: - (A) From bottom of the Work piece: - Guide the machine to the bottom of the work piece, if only one side of a work piece is visible. The jig saw is usually rotated and inserted from below. In this way, we can see the cutting line when sawing.

(B) From top of the work piece: - If the quality of the cut does not matter much, it is usually easier to cut at the top.

Q.12 Explain the Pendulum Adjustment in Jig Saw?

Ans: - In most jig saws, three are three different pendulum adjustable levels. At a high speed the number of strokes is greater, the machine performans more stroke. The appropriate number of strokes depends on material and feed. The switchable pendulum additionally pushes the saw blades forward during the upward movement so that it cuts more aggressively.

Q.13 Explain System accessories of circular saw TS55 REBQ plus?

Ans: - 1. Parallel side fence: - This accessory is used to provide the paralleled to the machine while cutting work piece.

2. Splinter guard: - this is used to prevent chip outs and to stop dust to come out while working with machine.

3. Kickback stop: - This is used as a rear and front stop position on guide rail and can also be used as guide stop.

4. Guide rail: - Guide rail is used to provide clamping on the work piece, and also it is used to cut straight as per requirement.

5. Dust collector or chip collection bag: -This bag or dust collector is used to collect dustb while cutting by circular saw.

Q.14 Define the System accessories of router OF 1010 EBQ?

Ans: - System accessory of router 1010 EBQ: -

1. Collect: - This is also known as locking nut, inset service display pack (diameter 6 – 8).
2. Centering Mandrel: - For all Festool routers, for shank support diameter 6.35 and 8 mm, for cantering the copying ring, in self-service display pack.

3. Copying ring: - This ring is use to follow the path which we make according to requirement.
4. Parallel side fence: - This fence is use to run router parallel to the edge at certain dimension.

Section – C

04X06 = 24 Marks

Q.15 Explain technical data of the circular saw and also explain technical specification of circular saw blade?

Ans: - Technical data of circular saw: -

1. Power consumption (W):	1200
2. Idle engine speed (min^{-1}):	2000 – 5000
3. Saw blade diameter (mm):	160
4. Cutting depth (mm):	0 – 55
5. Angular range:	(-1 -470)
6. Cutting depth (45):	43

Technical specification of saw blade:

160 * 2.2 * 20 W48

Diameter – 160 mm

Cutting width – 2.2 mm

Hole – 20 mm

No. of teeth – 48

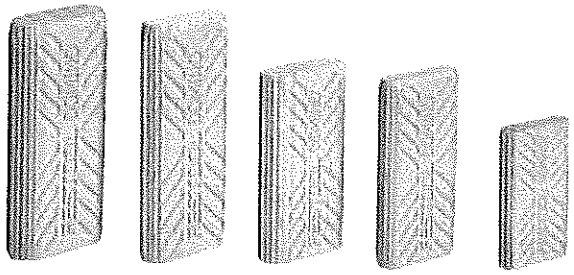
Tooth shape – W

Q.16 What is Domino machine? Draw the sketches of domino dowels and mention the all different sizes of domino dowels.

Ans: - Domino machine is used for joining the panels and perfectly suited for board and furniture making, as well as for lightweight frame or rack joints.

Sizes of domino dowels are:

1. 4*20 mm
2. 5*30 mm
3. 6*40 mm
4. 8*40 mm
5. 10*50 mm



Q.17 What are the benefits for using the dust collector while working with Power tools?
Ans: - due to following reasons, it is necessary to use dust collector while working with Power tools:

1. It saves from dust which goes into eyes while running machine.
2. It helps in working safely.
3. It makes the machine dust free.
4. It helps in making the working environment neat and clean.
5. It in cress the machine life.

Q.18 Explain the whole procedure to cut board with circular saw by using guide rail?
Ans: - To cut the work piece by using guide rail first of all set the guide rail according to the work piece on the line and then set the machine on the rail and remove play. Than connect dust collector to the machine check the required angle and start cutting.

Before start cutting ensure that the machine blade is not cutting any cable, hose pipe or the table, also use all safety precaution during this cutting procedure.

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Course Name: Power Tools **Max. Marks: 50**

Instruction: (if any)

Section – A

10X01 = 10 Marks

Q.1 Which one of the following is the accessory belongs to Jig Saw?

(a) Guide rail (b) Riving knife

(c) Side Stop (d) Perfect circle

Q.2 Which one of the following is Power tool used for making back wall groove?

(a) Hand Circular saw (b) Jig Saw

(c) Hand Router (d) Both (A) & (c)

Q.3 Which one of the following is the outer clearance for domino dowels results from the machine stop?

(a) 20 mm (b) 30 mm

(c) 50 mm (d) 37 mm

Q.4 Which one of the following is the set of depth used by 5 mm cutter in domino machine?

(a) (28,10,20) mm (b) (12,15,20) mm

(c) None of these (d) (10,15,20) mm

Q.5 Which one of the following is the minimum distance between two domino dowels for joining?

(a) (200 – 300) mm (b) (250 - 300) mm

(c) (100 – 150) mm (d) None of these

Q.6 Which one of the following is the material used for making domino dowels?

(a) Oak (b) Pine

(c) Mango (d) Beech

Q.7 Which one of the following is the routing depth taken while using 4 mm Domino cutter?

(a) 28 mm (b) 12 mm

(c) 15 mm (d) 20 mm

Q.8 Which one of the following is the power tools used with guide rail for cutting?

(a) Hand Router (b) Hand Circular Saw

(c) Jig Saw (d) Domino

Q.9 Which one of the following is the angular range of hand Circular Saw?

(a) 1 to 45 (b) -1 to -47

(c) -1 to -45 (d) None of these

Q.10 Which one of the following is the diameter of cutter used in Lamello X?

(a) 60 mm (b) 70 mm

(c) None of these (d) 100 mm

Section – B

04X04 = 16 Marks

Q.11 What are the two ways of guiding of Jig Saw? Explain them.

Q.12 Explain the Pendulum Adjustment in Jig Saw?

Q.13 Define the any five parts name of Jig Saw?

Q.14 What are the Specification of Blade of Lamello Classic X?

Section – C

04X06 = 24 Marks

Q.15 What is Lamello biscuit machine? Draw the sketches of Lamello biscuit and mention the all different sizes of biscuit.

Q.16 What is Domino machine? Draw the sketches of domino dowels and mention the all different sizes of domino dowels.

Q.17 What are the benefits for using the dust collector while working with Power tools?

Q.18 Explain technical data and application of Hand router?

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

Answer key.....

Set – A

School of Woodworking Skills

Session: 2021-22 (Summer Semester)

B. Voc. Program, 1st Semester,

End - Sem. Examination

Course Code: SCS1102 **Time: 2 Hours**

Course Name: Power Tools **Max. Marks: 50**

Instruction: (if any)

Section – A

10X01 = 10 Marks

Q.1 Which one of the following is the accessory belongs to Jig Saw?

(a) Guide rail (b) Riving knife

(c) Side Stop (d) Perfect circle (D)

Q.2 Which one of the following is Power tool used for making back wall groove?

(a) Hand Circular saw (b) Jig Saw

(c) Hand Router (d) Both (A) & (c) (D)

Q.3 Which one of the following is the outer clearance for domino dowels results from the machine stop?

(a) 20 mm (b) 30 mm

(c) 50 mm (d) 37 mm (D)

Q.4 Which one of the following is the set of depth used by 5 mm cutter in domino machine?

(a) (28,10,20) mm (b) (12,15,20) mm

(c) None of these (d) (10,15,20) mm (B)

Q.5 Which one of the following is the minimum distance between two domino dowels for joining?

(a) (200 – 300) mm (b) (250 - 300) mm

(c) (100 – 150) mm (d) None of these (C)

Q.6 Which one of the following is the material used for making domino dowels?

(a) Oak (b) Pine

(c) Mango (d) Beech (D)

Q.7 Which one of the following is the routing depth taken while using 4 mm Domino cutter?

(a) 28 mm (b) 12 mm

(c) 15 mm (d) 20 mm (D)

Q.8 Which one of the following is the power tools used with guide rail for cutting?

(a) Hand Router (b) Hand Circular Saw

(c) Jig Saw (d) Domino (B)

Q.9 Which one of the following is the angular range of hand Circular Saw?

(a) 1 to 45 (b) -1 to -47

(c) -1 to -45 (d) None of these (D)

Q.10 Which one of the following is the diameter of cutter used in Lamello X?

(a) 60 mm (b) 70 mm

(c) None of these (d) 100 mm (D)

Section – B

04X04 = 16 Marks

Q.11 What are the two ways of guiding of Jig Saw? Explain them.

Ans: - (A) From bottom of the Work piece: - Guide the machine to the bottom of the work piece, if only one side of a work piece is visible. The jig saw is usually rotated and inserted from below. In this way, we can see the cutting line when sawing.

(B) From top of the work piece: - If the quality of the cut does not matter much, it is usually easier to cut at the top.

Q.12 Explain the Pendulum Adjustment in Jig Saw?

Ans: - In most jig saws, three are three different pendulum adjustable levels. At a high speed the number of strokes is greater, the machine performans more stroke. The appropriate number of strokes depends on material and feed. The switchable pendulum additionally pushes the saw blades forward during the upward movement so that it cuts more aggressively.

Q.13 Define the any five parts name of Jig Saw?

Ans: - 1. Engine head
2. Grib knob
3. Drive unit (rod motor)
4. Speed controls
5. Chip guard
6. Pendulum lever
7. Left & right power switch

Q.14 What are the Specification of Blade of Lamello Classic X?

Ans: - 1. Diameter = 100 mm
2. Thickness = 4 mm
3. Inner whole diameter = 22 mm
4. Carbide tipped
5. Teeth = 6 with reversing teeth
6. Maximum depth = 20 mm
7. Low maintenance cost.

Section – C

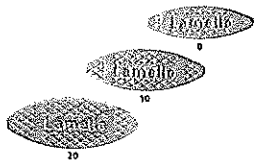
04X06 = 24 Marks

Q.15 What is Lamello biscuit machine? Draw the sketches of Lamello biscuit and mention the all different sizes of biscuit.

Ans: - Lamello biscuit machine is used for making biscuit joint, grooves, wood repairs and cut expansion gaps.

Sizes of Lamello biscuit are:

1. Lamello – 0.
2. Lamello – 10.
3. Lamello – 20.

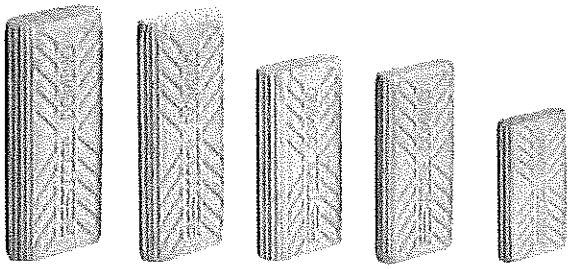


Q.16 What is Domino machine? Draw the sketches of domino dowels and mention the all different sizes of domino dowels.

Ans: - Domino machine is used for joining the panels and perfectly suited for board and furniture making, as well as for lightweight frame or rack joints.

Sizes of domino dowels are:

1. 4*20 mm
2. 5*30 mm
3. 6*40 mm
4. 8*40 mm
5. 10*50 mm



Q.17 What are the benefits for using the dust collector while working with Power tools?

Ans: - due to following reasons, it is necessary to use dust collector while working with Power tools:

1. It saves from dust which goes into eyes while running machine.
2. It helps in working safely.
3. It makes the machine dust free.
4. It helps in making the working environment neat and clean.

5. It incress the machine life.

Q.18 Explain technical data and application of Hand router?

Ans: - Work steps of changing the tool of a hand router:

1. Take a hand router machine.
2. Press the lock button and open the tool with spanner.
3. Turn the lock one time and open with spanner.
4. At last open the tool and insert the tool in the machine.

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

Registration No.: .....

Set – A

School of Woodworking Skills

Session: 2021-22 (Summer Semester)

B. Voc., 1st Semester,

End-Sem. Examination

Course Code: SCS1103 **Time: 2 Hours**

Course Name: Stationary Machines **Max. Marks: 50**

Instruction: (if any)

Section – A

10X01 = 10 Marks

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

(a) Universal (b) Solid Wood

(c) Solid wood along the grains (d) none of them

Q.2 There is no. of teeth in universal blade?

(a) 96 (b) 48

(c) 28 (d) none of them

Q.3 Which one of the following is the table width of surface planner?

(a) 520 mm (b) 560 mm

(c) 620 mm (d) none of them

Q.4 Which one of the following is the cutter block speed of surface planner?

(a) 500 rpm (b) 5000 rpm

(c) 2500 mm (d) 4500 mm

Q.5 Which one of the maximum depth of cut of surface planner?

(a) 3 mm (b) 5 mm

(c) 6 mm (d) 8 mm

Q.6 What is the maximum width of work piece to be machined in thickness planner?

(a) 300 mm (b) 630 mm

(c) 500 mm (d) 530 mm

Q.7 What is the minimum width of work piece to be machined in thickness planner?

(a) 8 mm (b) 5 mm

(c) 10 mm (d) none of them

Q.8 Which one of the following machine has both infeed table & worktable?

(a) Surface planner (b) thicknesses planner

(c) Panel Saw (d) Band Saw

Q.9 What is the maximum cutting height of band saw machine?

(a) 360 mm (b) 300 mm

(c) 260 mm (d) none of them

Q.10 Which one of the worktable dimension of band saw?

(a) 580*810
(b) 560*860
(c) 600*1200
(d) none of them

Section – B

04X04 = 16 Marks

Q.11 Write the definition and application of panel saw machine?

Q.12 What is the difference between Main saw and Scoring saw?

Q.13 define the features of Surface planner?

Q.14 Write down the steps to start the band saw machine?

Section – C

04X06 = 24 Marks

Q.15 Write dawn all the safety precautions and working steps of surface planner?

Q.16 What are the steps foe changing the saw blade of panel saw?

Q.17 Write dawn the application of table insert of the band saw machine?

Q.18 Define the application of protection hood on the panel saw?

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

Answer key...

Set – A

School of Woodworking Skills

Session: 2021-22 (Summer Semester)

B. Voc., 1st Semester,

End-Sem. Examination

Course Code: SCS1103 **Time: 2 Hours**

Course Name: Stationary Machines **Max. Marks: 50**

Instruction: (if any)

Section – A

10X01 = 10 Marks

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

(a) Universal (b) Solid Wood

(c) Solid wood along the grains (d) none of them (A)

Q.2 There is no. of teeth in universal blade?

(a) 96 (b) 48

(c) 28 (d) none of them (B)

Q.3 Which one of the following is the table width of surface planner?

(a) 520 mm (b) 560 mm

(c) 620 mm (d) none of them (A)

Q.4 Which one of the following is the cutter block speed of surface planner?

(a) 500 rpm (b) 5000 rpm

(c) 2500 mm (d) 4500 mm (B)

Q.5 Which one of the maximum depth of cut of surface planner?

(a) 3 mm (b) 5 mm

(c) 6 mm (d) 8 mm (D)

Q.6 What is the maximum width of work piece to be machined in thickness planner?

(a) 300 mm (b) 630 mm

(c) 500 mm (d) 530 mm (B)

Q.7 What is the minimum width of work piece to be machined in thickness planner?

(a) 8 mm (b) 5 mm

(c) 10 mm (d) none of them (C)

Q.8 Which one of the following machine has both infeed table & worktable?

(a) Surface planner (b) thicknesses planner

(c) Panel Saw (d) Band Saw (A)

Q.9 What is the maximum cutting height of band saw machine?

(a) 360 mm (b) 300 mm

(c) 260 mm (d) none of them (A)

Q.10 Which one of the worktable dimension of band saw?

(a) 580*810 (b) 560*860

(c) 600*1200 (d) none of them (A)

Section – B

04X04 = 16 Marks

Q.11 Write the definition and application of panel saw machine?

Ans: - Panel Saw is a good working machine which is used to cut panels, profiles, solid wood, mdf, laminates etc. it is used to cut materials both horizontally and vertically. Panel saw have one saw blade, or a scoring along with a main saw blade.

Application of panel saw: -

- ✓ It is use for straight cutting along the grains.
- ✓ It is use for cross cutting.
- ✓ It is use for angle cut.
- ✓ It is use for miter cut.
- ✓ It is use to make groove.

Q.12 What is the difference between Main saw and Scoring saw?

Ans: - Main Saw: -

- ✓ It is used for completing the whole cutting process.
- ✓ It rotates clock wise.
- ✓ It has greater diameter than scoring saw.

Scoring Saw: -

- ✓ It is used to perform chip free cuts.
- ✓ It reduces chip out by providing 0.2 mm fine cut.
- ✓ It rotates clock wise.

Q.13 define the features of Surface planner?

Ans: -

- ✓ It has a infeed table and a work table.
- ✓ Infeed table is adjustable we can adjust it according to our requirement.
- ✓ The cutter head never moves only the infeed table moves for cutting depth.
- ✓ The work table has a high quality finish.
- ✓ It is made from ribbed cast iron for vibration free movement while working.

Q.14 Write down the steps to start the band saw machine?

Ans: - Machine Starting: -

- ✓ Make sure that the dust collector is on.
- ✓ All the doors are firmly closed.
- ✓ The emergency stop button is off.

- ✓ Blade guard is lowered to the table.
- ✓ For starting the machine press the start button.

Section – C

04X06 = 24 Marks

Q.15 Write dawn all the safety precautions and working steps of surface planner?

Ans: -

- ✓ Never wear gloves while working on this machine it might be injurious if the gloves get stuck in the better.
- ✓ Wear tight clothes.
- ✓ Avoid wearing hand bands or watch while working on this machine.
- ✓ Wear ear plug.
- ✓ Wear safety glasses.
- ✓ Keep the machine clean.
- ✓ Wait near the machine till the rotation of the blade is stopped.

Q.16 What are the steps foe changing the saw blade of panel saw?

Ans: -

- ✓ Ensure that the emergency is on.
- ✓ Switch off the machine.
- ✓ Set the saw blade to the upper limit setting and tilt at 0^0.
- ✓ Remove the safety hood.
- ✓ Place the sliding table at upper limit.
- ✓ Open the guard, insert locking pin through table plate Saw shaft.
- ✓ Unscrew the nut with ring spanner in the clockwise direction.
- ✓ Place the saw blade in the drive shaft and screw it by hand.
- ✓ Lastly tight the nut by ring spanner.

Q.17 Write dawn the application of table insert of the band saw machine?

Ans: -

- ✓ Do not touch band saw while idling.
- ✓ The table insert should have as small and opening as possible, but do not touch the band saw and be exactly flush with the table surface.
- ✓ The small opening should prevent small pieces of wood from being pinched and UN even heating of the saw blade.
- ✓ The insert is preferably made of wood.
- ✓ They can thus be replacing and band saw takes non damage when touched.

Q.18 Define the application of protection hood on the panel saw?

Ans: -

- ✓ Protective hood use protection against contact with the circular saw blade.
- ✓ Preventing a work piece kickback.
- ✓ Protection against splintering wood parts, branches and sawdust extraction of the chips.

Saw blade protection hood for straight cut.

Protection hood for miter cut.

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

Registration No.: .....

Set – B

School of Woodworking Skills

Session: 2021-22 (Summer Semester)

B. Voc., 1st Semester,

End-Sem. Examination

Course Code: SCS1103 **Time: 2 Hours**

Course Name: Stationary Machines **Max. Marks: 50**

Instruction: (if any)

Section – A

10X01 = 10 Marks

Q.1 Which one of the following material we use for the table insert in band saw machine?

(a) Metal (b) wood

(c) Plastic (d) rubber

Q.2 There is no. of teeth in universal blade?

(a) 96 (b) 48

(c) 28 (d) none of them

Q.3 Which one of the following is the table width of surface planner?

(a) 520 mm (b) 560 mm

(c) 620 mm (d) none of them

Q.4 Which one of the following is the cutter block speed of surface planner?

(a) 500 rpm (b) 5000 rpm

(c) 2500 mm (d) 4500 mm

Q.5 Which one of the following is controlled on the outfeed table of the surface planner?

(a) Height (b) Depth

(c) Angle (d) Thickness

Q.6 What is the maximum width of work piece to be machined in thickness planner?

(a) 300 mm (b) 630 mm

(c) 500 mm (d) 530 mm

Q.7 What is the minimum width of work piece to be machined in thickness planner?

(a) 8 mm (b) 5 mm

(c) 10 mm (d) none of them

Q.8 Which one of the following function of Scoring Saw?

(a) It is used to avoid chip out (b) Used to make curves

(c) Used to make a groove (d) None of them

Q.9 What is the maximum cutting height of band saw machine?

(a) 360 mm (b) 300 mm

(c) 260 mm (d) none of them

Q.10 Which one of the worktable dimension of band saw?

(a) 580*810
(b) 560*860
(c) 600*1200
(d) none of them

Section – B

04X04 = 16 Marks

Q.11 What are the function of riving knife?

Q.12 What is the difference between Main saw and Scoring saw?

Q.13 Explain the safe and efficient work position on the band saw machine?

Q.14 Write down the steps to start the band saw machine?

Section – C

04X06 = 24 Marks

Q.15 Write dawn all the safety precautions and working steps of surface planner?

Q.16 What are the steps foe changing the saw blade of panel saw?

Q.17 Describe the function of Scoring Saw?

Q.18 Define the application of protection hood on the panel saw?

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

Answer key

Set – B

School of Woodworking Skills

Session: 2021-22 (Summer Semester)

B. Voc., 1st Semester,

End-Sem. Examination

Course Code: SCS1103 **Time: 2 Hours**

Course Name: Stationary Machines **Max. Marks: 50**

Instruction: (if any)

Section – A

10X01 = 10 Marks

Q.1 Which one of the following material we use for the table insert in band saw machine?

(a) Metal (b) wood

(c) Plastic (d) rubber (B)

Q.2 There is no. of teeth in universal blade?

(a) 96 (b) 48

(c) 28 (d) none of them (B)

Q.3 Which one of the following is the table width of surface planner?

(a) 520 mm (b) 560 mm

(c) 620 mm (d) none of them (A)

Q.4 Which one of the following is the cutter block speed of surface planner?

(a) 500 rpm (b) 5000 rpm

(c) 2500 mm (d) 4500 mm (B)

Q.5 Which one of the following is controlled on the outfeed table of the surface planner?

(a) Height (b) Depth

(c) Angle (d) Thickness (C)

Q.6 What is the maximum width of work piece to be machined in thickness planner?

(a) 300 mm (b) 630 mm

(c) 500 mm (d) 530 mm (B)

Q.7 What is the minimum width of work piece to be machined in thickness planner?

(a) 8 mm (b) 5 mm

(c) 10 mm (d) none of them (C)

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(a) It is used to avoid chip out (b) Used to make curves

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Q.9 What is the maximum cutting height of band saw machine?

(a) 360 mm (b) 300 mm

(c) 260 mm (d) none of them (A)

Q.10 Which one of the worktable dimension of band saw?

(a) 580*810 (b) 560*860

(c) 600*1200 (d) none of them (A)

Section – B

04X04 = 16 Marks

Q.11 What are the function of riving knife?

Ans: -

- ✓ Avoids the kick back as a result of jamming in the cutting line.
- ✓ It also prevents contact with the rising gear rim.
- ✓ It decreases the tension in the wood while cutting.

Q.12 What is the difference between Main saw and Scoring saw?

Ans: - Main Saw: -

- ✓ It is used for completing the whole cutting process.
- ✓ It rotates clock wise.
- ✓ It has greater diameter than scoring saw.

Scoring Saw: -

- ✓ It is used to perform chip free cuts.
- ✓ It reduces chip out by providing 0.2 mm fine cut.
- ✓ It rotates clock wise.

Q.13 Explain the safe and efficient work position on the band saw machine?

Ans: - Auxiliary wood for longitudinal cuts for mortise and Tenon. The first step is to take over the alignment of the saw blade with the auxiliary wood.

Guide the work piece with the auxiliary wood.

Setting with auxiliary wood, the auxiliary wood can also be used for deposition.

Q.14 Write down the steps to start the band saw machine?

Ans: - Machine Starting: -

- ✓ Make sure that the dust collector is on.
- ✓ All the doors are firmly closed.
- ✓ The emergency stop button is off.
- ✓ Blade guard is lowered to the table.
- ✓ For starting the machine press the start button.

Section – C

04X06 = 24 Marks

Q.15 Write dawn all the safety precautions and working steps of surface planner?

Ans: -

- ✓ Never wear gloves while working on this machine it might be injurious if the gloves get stuck in the better.
- ✓ Wear tight clothes.
- ✓ Avoid wearing hand bands or watch while working on this machine.
- ✓ Wear ear plug.
- ✓ Wear safety glasses.
- ✓ Keep the machine clean.
- ✓ Wait near the machine till the rotation of the blade is stopped.

Q.16 What are the steps foe changing the saw blade of panel saw?

Ans: -

- ✓ Ensure that the emergency is on.
- ✓ Switch off the machine.
- ✓ Set the saw blade to the upper limit setting and tilt at 0^0.
- ✓ Remove the safety hood.
- ✓ Place the sliding table at upper limit.
- ✓ Open the guard, insert locking pin through table plate Saw shaft.
- ✓ Unscrew the nut with ring spanner in the clockwise direction.
- ✓ Place the saw blade in the drive shaft and screw it by hand.
- ✓ Lastly tight the nut by ring spanner.

Q.17 Describe the function of Scoring Saw?

Ans: - Scoring Saw: -

- ✓ It is used to perform chip free cuts.
- ✓ It reduces chip out by providing 0.2 mm fine cut.
- ✓ It rotates clock wise.

Q.18 Define the application of protection hood on the panel saw?

Ans: -

- ✓ Protective hood use protection against contact with the circular saw blade.
- ✓ Preventing a work piece kickback.
- ✓ Protection against splintering wood parts, branches and sawdust extraction of the chips.

Saw blade protection hood for straight cut.

Protection hood for miter cut.

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

Registration No.: .....

Set – B

School of Woodworking Skills

Session: 2021-22 (Summer Semester)

B. Voc., 1st Semester,

End-Sem. Examination

Course Code: SCS1104 **Time: 2 Hours**

Course Name: Assembly and Fittings **Max. Marks: 50**

Instruction: (if any)

Section – A

10X01 = 10 Marks

Q.1 Which one of the following is the example of joint where no extra connector is required for joining?

(a) Biscuit joint (b) Dowel joint

(c) Lap joint (d) None of them

Q.2 Which one of the following is the example of joint where extra connector is required for joining?

(a) Bridle joint (b) Dovetail joint

(c) Biscuit joint (d) None of them

Q.3 Which one of the following machine we used for Lamello biscuit 20?

(a) Zeta P2 (b) Circular

(c) Classic x (d) Domino

Q.4 Which one of the standard size of Lamello biscuit?

(a) Ten (b) Zero

(c) Twenty (d) All of them

Q.5 Which one of the following is the direction where the top of carpenter triangle always points?

(a) Downwards (b) Backwards

(c) Upwards (d) Right-side

Q.6 Which one of the following machine can be used to cut a miter?

(a) Circular saw (b) Edge router

(c) Jig Saw (d) Hand router

Q.7 Which machine is the use for make a groove?

(a) Hand router (b) Jig saw

(c) Hand drill (d) All of them

Q.8 Which one of the following signs is helpful to identify the work pieces in the assembling process?

(a) Zig Zag lines (b) Triangle

(c) Snack line (d) Cross

Q.9 Which one of the following Lamello biscuits can be used for a corner joint with 8 mm MDF boards?

(a) 20 mm (b) 10 mm

(c) 0 (d) 40 mm

Q.10 Which one of the following wood is used to make Lamello biscuits?

(a) Steam beach (b) Teak wood

(c) Mango wood (d) Pine wood

Section – B

04X04 = 16 Marks

Q.11 What is a Butt joint? Write down the types of butt joint.

Q.12 What is a dry gluing process? Why do we use this process before gluing?

Q.13 Define the lap joint?

Q.14 Define the different marking signs and symbols used is carpenter assembly?

Section – C

04X06 = 24 Marks

Q.15 Describe five different types of joinery methods in carpenter assembly?

Q.16 What are the points that should be considered while selecting wood for assembly?

Q.17 Write down the work plan for making a joint that contains cutting and chiseling??

Q.18 Write down the steps to make a bridle joint?

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

Answer key

Set – B

School of Woodworking Skills

Session: 2021-22 (Summer Semester)

B. Voc., 1st Semester,

End-Sem. Examination

Course Code: SCS1104 **Time: 2 Hours**

Course Name: Assembly and Fittings **Max. Marks: 50**

Instruction: (if any)

Section – A

10X01 = 10 Marks

Q.1 Which one of the following is the example of joint where no extra connector is required for joining?

(a) Biscuit joint (b) Dowel joint

(c) Lap joint (d) None of them (C)

Q.2 Which one of the following is the example of joint where extra connector is required for joining?

(a) Bridle joint (b) Dovetail joint

(c) Biscuit joint (d) None of them (C)

Q.3 Which one of the following machine we used for Lamello biscuit 20?

(a) Zeta P2 (b) Circular

(c) Classic x (d) Domino (C)

Q.4 Which one of the standard size of Lamello biscuit?

(a) Ten (b) Zero

(c) Twenty (d) All of them (D)

Q.5 Which one of the following is the direction where the top of carpenter triangle always points?

(a) Downwards (b) Backwards

(c) Upwards (d) Right-side (C)

Q.6 Which one of the following machine can be used to cut a miter?

(a) Circular saw (b) Edge router

(c) Jig Saw (d) Hand router (A)

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(a) 20 mm (b) 10 mm

(c) 0 (d) 40 mm (C)

Q.10 Which one of the following wood is used to make Lamello biscuits?

(a) Steam beach (b) Teak wood

(c) Mango wood (d) Pine wood (A)

Section – B

04X04 = 16 Marks

Q.11 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. Of those there is the ....

- ✓ T –butt
- ✓ End to end butt
- ✓ T-Lap
- ✓ Miter butt
- ✓ Edge to edge butt
- ✓

Q.12 What is a dry gluing process? Why do we use this process before gluing?

Ans: - Process in which we follow whole gluing process without using glue in 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.13 Define the lap joint?

Ans: - The end of a piece of wood is laid over and connected to another piece of wood. And this is the next simplest and weakest joint.

Q.14 Define the different marking signs and symbols used is carpenter assembly?

Ans: -

- ✓ Wave line: - Wave line show the material will be remove till the wave line.
- ✓ Circle Line: - Circle line show the material will be cut till the center point of the circle.
- ✓ Cross line: - Cross line show this material will be remove throughout.
- ✓ Triangle sign: - 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.

Section – C

04X06 = 24 Marks

Q.15 Describe five different types of joinery methods in carpenter assembly?

Ans: -

- ✓ Gluing: - in the gluing process by using Lamello in assembly, after making groove in all pieces first we will glue all the biscuits on the thickness side of the pieces and then we glued all the side pieces on the bottom of the box and will clamp it for 3 to 4 hours.
- ✓ Nailing: - In the nailing process we can nail parts together by using different nails.
- ✓ Biscuit joinery: - In biscuit joinery system we can joint to parts together by using domino joints.
- ✓ Domino joinery system: - In the domino joinery system we can joint to parts together by using domino joints.
- ✓ Wooden Dowel: - In the wooden dowel joinery system we can joint to parts together by using wooden dowel and glue.

Q.16 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, resin etc.)
- ✓ Surface texture
- ✓ Color difference
- ✓ Knots
- ✓ Fiber coarse and tree ring coarse

Q.17 Write down the work plan for making a joint that contains cutting and chiseling?

Ans: -

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

Q.18 Write down the steps to make a bridle joint?

Ans: - Also known as open Tenon, open mortise and Tenon, or tongue and fork joints, this joint is where the through mortise is open on one side and forms a fork shape. The mate has a through Tenon or necked joint. Also used in scarf joints and sometimes sill corner joints in timber framing.

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

Answer key...

School of Woodworking Skills

Session: 2021-22 (Summer Semester)

B. Voc. Program, 1st Semester,

End-Sem. Examination

Course Code: SCS1105 **Time: 2 Hours**

Course Name: Carpenter Materials (SET B) **Max. Marks: 50**

Instruction: All the questions are compulsory.

Section – A

10X01 = 10 Marks

Q1) Where is Sapwood located in the structure of softwood?

(a) Between cambium and core (b) Between bast and bark

(c) Between pith and core (d) Between cambium and bast

Q2) The Aluminum Oxide used for wood working as

(a) adhesive (b) cleaning agent

(c) abrasive (d) None

Q3) The colour of cellulose fibers is?

(a) White (b) Black

(c) Gray (d) Brown

Q4) Veneers that are visible on the finished work-piece are known as

(a) Blind veneer **(b) Covering veneer**

(c) Deck veneer (d) Barrier veneer

Q5) Which part of the trunk is known as growth tissue (forms new cells through cell division)?

(a) Core (b) Sapwood

(c) **Cambium** (d) Bast

Q6) One of the essential properties of abrasive for its selection is

(a) Plasticity (b) Density

(c) **Particle size** (d) Humidity

Q7) The layer responsible for transport of nutrient to the core called as

(a) Core (b) Sapwood

(c) Cambium (d) **Medullary rays**

Q8) The constituent of wood used for paper production and insulation is

(a) Sap (b) Lignin

(c) **Cellulose** (d) None

Q9) The characteristic provided by size and cell arrangement in wood is

(a) Strength (b) tolerance

(c) **Hardness** (d) None

Q10) Name the wood having Brinell hardness number equal to 48 N/mm^2

(a) **Acacia** (b) Oak

(c) Teak (d) Plum tree

Section – B

04X04 = 16 Marks

11) Write short note on: Hardness and Bulk density.

Answer

The term hardness is used in two senses, namely: (1) resistance to indentation, and (2) resistance to abrasion or scratching .[In the latter sense hardness combined with toughness is a measure of the wearing ability of wood and is an important consideration in the use of wood for floors, paving blocks, bearings, and rollers.

In the case of porous substances, the ratio between mass and volume can vary greatly. the decisive factor is how much material and how much air or gas is in the volume. That is why the term density is used instead of density for such substances

12) Define is laminate with its advantage?

Answer

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.

Advantage

HPL boards are insensitive to all normal household chemicals. They are heat-resistant up to about 150 ° C, for short-term exposure in dry heat. They are water resistant. Standing wet under parked However, objects can stain. 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.The HPL boards are hard and brittle, so they are very cracked and sensitive to impact

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

Answer:

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.

14) Write properties of laminate.

Answer:

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.

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

Section – C

04X06 = 24 Marks

15) Explain detail classification of abrasive.

Answer:

Abrasives are shaped for various purposes. They are classified as

Natural and synthetic abrasive:

Natural abrasives are often sold as dressed stones, usually in the form of a rectangular block. Both natural and synthetic abrasives are commonly available in a wide variety of shapes, often coming as bonded or coated abrasives, including blocks, belts, discs, wheels, sheets, rods and loose grains. The Natural abrasives occur as minerals or rocks in the crust of the earth. Diamond, Garnet, Corundum, and Quartz are some examples of natural abrasives.

The Artificial or Synthetic abrasive group includes a number of materials possessing very high hardness. Carborundum, Aluminum Oxide, and Glass Fall are some example of this group.

Bonded abrasive and coated abrasive

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.

16) Write the disadvantages of using the veneers.

Answer:

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.

17) Explain the structure of Laminate.

Answer:

Construction

Essentially, the decorative laminate (HPL) consists of more than 60% paper. The remaining 30 to 40% consist of hardened phenol formaldehyde resin for the core and melamine formaldehyde resin for the surface layers.

Top layer

The approximately 15 to 80g / m2 thin paper, impregnated with melamine resin, is applied to the printed decorative paper to increase the abrasion resistance.

Decorative layer

The decorative layer consists of melamine resin impregnated, printed paper with a thickness of 50 to 160 g / m2, which is usually colored through. Thin wood veneers or metal foils impregnated with melamine resin are also used.

Barrier layer

White cellulose paper impregnated with melamine resin is used used with light decorative layers for color blocking.

Core papers

The cellulose kraft paper with a strength of 80 to 300 g / m2 is not uncommon bleaches for use and is impregnated with phenolic resins. The number Core papers determine the thickness of the laminate.

Balancing layer

The counter-pull layer is standard for panels over 2mm thick available. These resinimpregnated papers are stacked one on top of the other and pressed in packets under pressure between sheets at about 150 ° C. to form an extremely hard mass

18) Explain any three mechanical properties of solid wood.

Answer:

TIFFNESS: The property by means of which a body acted upon by external forces tends to retain its natural size and shape, or resists deformation. ™ Thus a material that is difficult to bend or otherwise deform is stiff; one that is easily bent or otherwise deformed is flexible. Flexibility is not the exact counterpart of stiffness, as it also involves toughness and pliability.

2. 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.

3. 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.

4. SHEARING STRENGTH: Whenever forces act upon a body in such a way that one portion tends to slide upon another adjacent to it the action is called a shear. In wood this shearing action may be (1) along the grain, or (2) across the grain.

5. TRANSVERSE OR BENDING STRENGTH: BEAMS: When external forces acting in the same plane are applied at right angles to the axis of a bar so as to cause it to bend, they occasion a shortening of the longitudinal fibers on the concave side and an elongation of those on the convex side.

6. TOUGHNESS: TORSION: Wood that is difficult to split is said to be tough Toughness includes flexibility and is the reverse of brittleness, in that tough woods break gradually.

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Registration no.....

Set - A

School of Woodworking Skills

Session: 2021-22 (Summer Semester)

B. Voc. Program, 1st Semester,

End Sem. 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

Q. 1 All mechanical drawing is created generally in

(A) Km (B) Meter

(C) Millimeter (D) Decameter

Q. 2 Drawing is not created generally in which angle of projection

(A) 2nd (B) 1st

(C) 3rd (D) None of these

Q. 3 20 millimeters are equivalent to

(A) 2 centimeter (B) 20 meter

(C) 2 meter (D) None of them

Q. 4 A point lies on vertical plane but above horizontal plane it lies in which quadrant.

(A) 2nd (B) 1st

(C) 3rd (D) 4th

Q. 5 What is the significance of hatching line in technical drawing?

(A) Outlines of the object (B) Hidden surface

(C) Cutting section (D) line of symmetry

Q. 6 In the given option which pencil will be the Darker?

(A) H (B) 2H

(C) 2B (D) 3B

Q. 7 Drawing is created in which angle of projection

(A) 2nd (B) 1st

(C) 4th (D) None of these

Q. 8 The Representative factor for Full size scale is

(A) Equal to 1 (B) Always greater than 1

(C) A&B Both (D)None of them

Q. 9 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

Q. 10 Which one will be the size for A3 Sheet in millimeter?

(A) 420x297 (B) 29.7x21.0

(C) 297x210 (D) 594x841

Section B

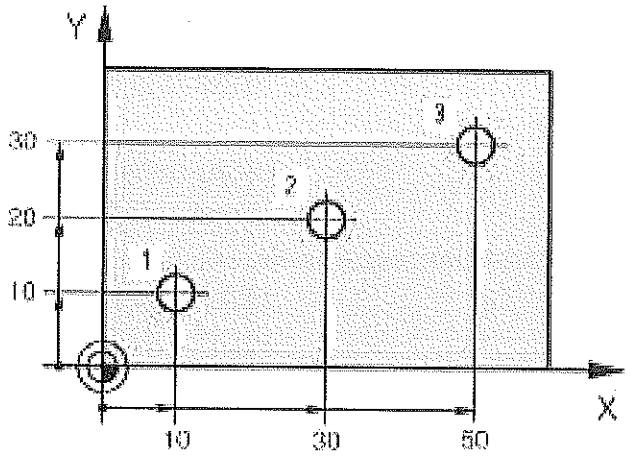
04X04 = 16 Marks

Q. 11 Write short note on projection with proper diagram.

Q. 12 Write short notes on types of lines used in engineering drawing with application.

Q. 13 Draw the layout of drawing sheet with title Block

Q. 14 Find out the coordinates of point 1,2,3 in absolute system.



Section C

04X06 = 24 Marks

Q. 15 Draw the projection

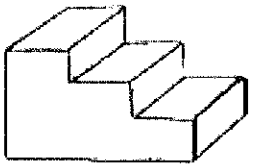
a) A point is placed 20 mm in front of VP and 40 mm below HP.

b) A point is placed 0 mm behind VP and 10 mm above HP.

Q. 16 Define any three out of the following

a) Nominal Size
b) Basic Size
c) Actual Size
d) Tolerance

Q. 17 Draw the front, top and right side view of the following Diagram in 1st angle projection?



Q. 18 Define scale in drawing and also calculate the RF of an object of length 2 micron is drawn on a size of 200mm.

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Answer Key

Set - A

School of Woodworking Skills

Session: 2021-22 (Summer Semester)

B. Voc. Program, 1st Semester,

End Sem. 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

Q. 1 All mechanical drawing is created generally in
(A) Km (B) Meter
(C) Millimeter (D) Decameter Ans. C

Q. 2 Drawing is not created generally in which angle of projection
(A) 2nd (B) 1st
(C) 3rd (D) None of these Ans. A

Q. 3 20 millimeters are equivalent to
(A) 2 centimeter (B) 20 meter
(C) 2 meter (D) None of them Ans. A

Q. 4 A point lies on vertical plane but above horizontal plane it lies in which quadrant.
(A) 2nd (B) 1st
(C) 3rd (D) 4th Ans. B

Q. 5 What is the significance of hatching line in technical drawing?
(A) Outlines of the object (B) Hidden surface
(C) Cutting section (D) line of symmetry Ans. B

Q. 6 In the given option which pencil will be the Darker?
(A) H (B) 2H
(C) 2B (D) 3B Ans. D

Q. 7 Drawing is created in which angle of projection
(A) 2nd (B) 1st
(C) 4th (D) None of these Ans. B

Q. 8 The Representative factor for Full size scale is

(A) Equal to 1 (B) Always greater than 1

(C) A&B Both (D)None of them Ans. A

Q. 9 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

Q. 10 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

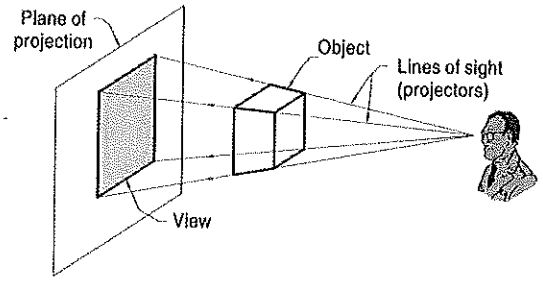
04X04 = 16 Marks

Q. 11 Write short note on projection with proper diagram.

Ans. In engineering, 3-dimensonal objects and structures are represented graphically on a 2-dimensional media. The act of obtaining the image of an object is termed "projection". The image obtained by projection is known as a "view".

All projection theory is based on two variables:

- Line of sight
- Plane of projection.
- A plane of projection (i.e. an image or picture plane) is an imaginary flat plane upon which the image created by the line of sight is projected. The image is produced by connecting the points where the lines of sight pierce the projection plane. In effect, 3-D object is transformed into a 2-D representation, also called projections. The paper or computer screen on which a drawing is created is a plane of projection.



Q. 12 Write short notes on types of lines used in engineering drawing with application.

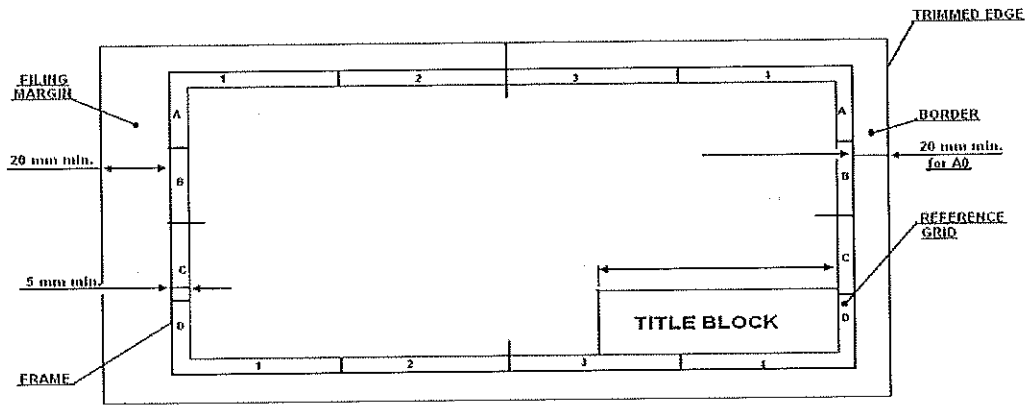
Ans. **Lines**

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.

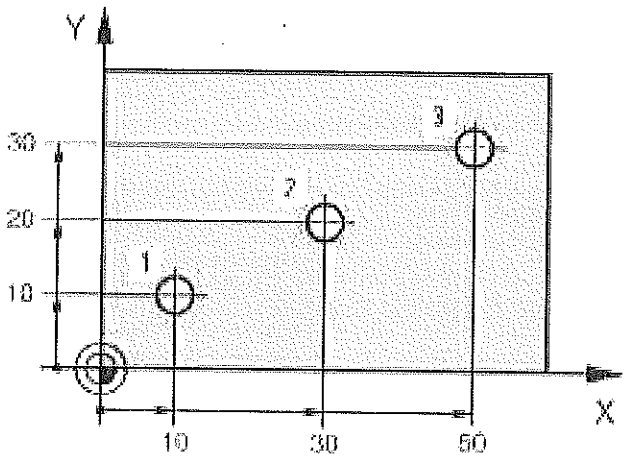
Illustration	Application
Thick	Outlines, visible edges, surface boundaries of objects, margin lines
Continuous thin	Dimension lines, extension lines, section lines leader or pointer lines, construction lines, boarder lines
Continuous thin wavy	Short break lines or irregular boundary lines – drawn freehand
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

Q. 13 Draw the layout of drawing sheet with title Block

Ans



Q. 14 Find out the coordinates of point 1,2,3 in absolute system.



Ans.

Absolute system

Hole 1	Hole 2	Hole 3
X = 10 mm	X = 30 mm	X = 50 mm
Y = 10 mm	Y = 20 mm	Y = 30 mm

Section C

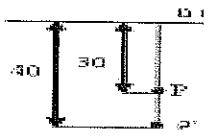
04X06 = 24 Marks

Q. 15 Draw the projection

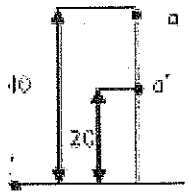
a) A point is placed 20 mm in front of VP and 40 mm below HP.

b) A point is placed 0 mm behind VP and 10 mm above HP.

Ans. a)



b)



Q. 16 Define any three out of the following

a) Nominal Size
b) Basic Size
c) Actual Size
d) Tolerance

Ans.

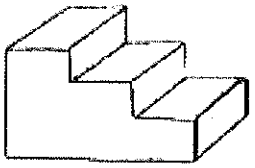
Nominal size: The nominal size of a dimension is the size specified in the drawing. It is usually given in the drawing as rounded of whole millimeters.

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

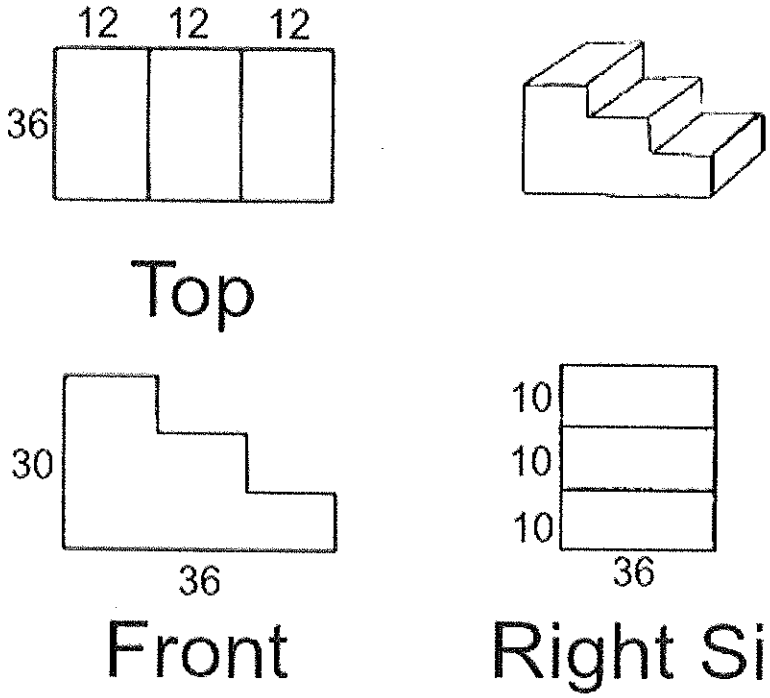
Actual size: the actual size of an object measured.

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

Q. 17 Draw the front, top and right side view of the following Diagram in 1st angle projection?



Ans.



Q. 18 Define scale in drawing and also calculate the RF of an object of length 2 micron is drawn on a size of 200mm.

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 micron

Drawing length = 200mm

$$Rf = \frac{.200}{2} = 0.1$$