Registration No.: .....

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

School of Carpenter Skills

B. Voc. Program, Summer Semester (2017-18)

I Semester, End-Sem. Examination

Course Code: SCS1101 **Time: 3 Hours**

Course Name: Hand Skills & Transfer of Measurement **Max. Marks: 100**

Instructions:

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

Section – A

20X01 = 20 Marks

Q. 1: 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. 2: 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

Q. 3: Which file is used to sharpen the Indian hand saw?

A. Flat file
B. Round file
C. Half round file
D. triangular file

Q. 4: The sharpening angle of the chisel should be:

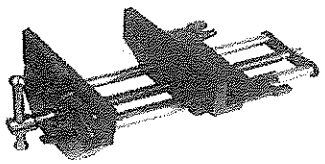
A. 10-20 Degree
B. 30-35 Degree
C. 40-45 Degree
D. 50-60 Degree

Q. 5: If the size of a board is 3.5-meter-long and 15-centimeter-wide, then total area of the board would be:

A. 5.25 m^2
B. 0.525 m^2
C. 52.5 m^2
D. 1.5 m^2

Q. 6: Tick the right name of the tool shown in the figure below:

A. Metal vice
B. Pipe vice
C. Carpenter vice
D. None of these

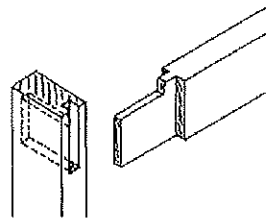


Q. 7: The marking gauge is used to:

A. Mark parallel line on the wood
B. Mark round line on the wood
C. Both of above
D. None of these

Q. 8: Tick the right name of the joint shown in the figure below:

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



Q. 9: 1 Inch equals to:

A. 35.4mm
B. 25.4mm
C. 2.54mm
D. 3.54mm

Q. 10: The smallest mark on a roll meter is:

A. Millimeter
B. Meter
C. Inch
D. Foot

Q. 11: How many pieces of size 300mm x 600mm x 18mm can be cut from one sheet of size 1240mm x 2460mm x 18mm?

A. 20 pieces
B. 16 Pieces
C. 24 Pieces
D. 15 pieces

Q. 12: When using a hammer to strike a nail, the strength mainly comes from your:

A. Shoulder
B. Elbow
C. Hand
D. Wrist

Q. 13: Identify the tool shown below:

A. Bar clamp
B. Pressure clamp
C. Mini clamp
D. C clamp

Q. 14: What tool would you use to remove the material for a hinge slot in a door?

A. Chisel
B. Hand saw
C. Circular saw
D. Utility knife

Q. 15: What type of clamp is best used when clamping corners of a picture frame together?

A. C clamp
B. Bar clamp
C. Pipe clamp
D. Band clamp

Q. 16: Which tools is used to mark 45^0 line on work piece?

A. Try Square
B. Mitre Square
C. Bevel Square
D. None of these

Q. 17: 1 Decimeter equals to:

A. 1mm
B. 10mm
C. 100mm
D. 0.1mm

Q. 18: What is the perimeter of a square with sides 1.2 meter and 2440mm long?

A. 6280 mm
B. 7.280 meter
C. 72.80 meter
D. 6.280 meter

Q. 19: Which tool is best suited for transferring a 35^0 angle from one piece to another piece?

A. Try square
B. Marking gauge
C. Mitre square
D. Bevel square

Q. 20: Which type of fire extinguisher is used for wood?

A. A-type
B. B-type
C. C-type
D. D-type

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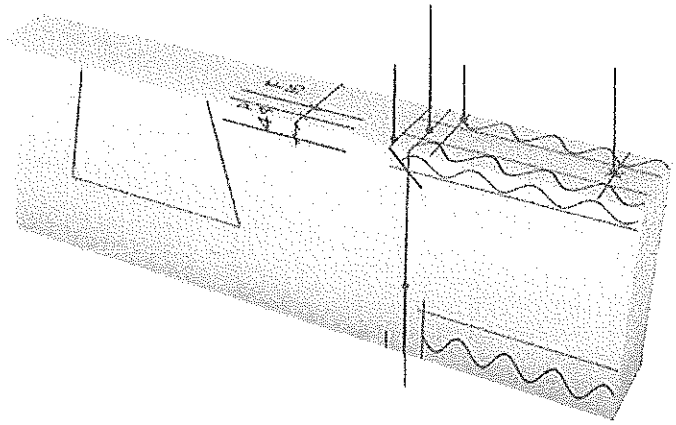
Section – B

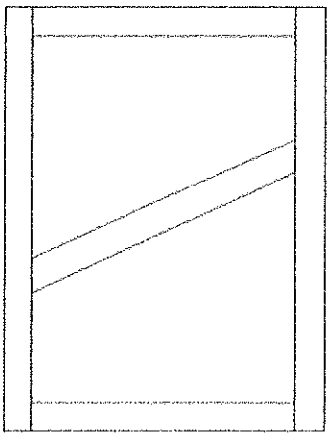
06X05 = 30 Marks

Q. 21: Draw diagram of the following two hand tools and label their parts.
A. Marking/ Mortice Gauge: B: Jack Planer

Q. 22: Write the name of the measurement shown in the diagram:



Q. 23: Sketch 5 different tools which are used for the marking process and name them Accordingly.
Q. 24: How will you check if the try square is correct or not? Explain with the help of diagram.
Q. 25: What kind of safety precautions should be kept in mind while working with carpentry hand tools?
Q. 26: Sketch any two joints and name them accordingly.
Q. 27: Write the name of any five holding and supporting tools.
Q. 28: Mark the tringle signs on the picture given below.



Section – C

05X10 = 50 Marks

Q. 29: Describe 10 different types of symbols used in the marking process.
Q. 30: Write the steps used to mark the dovetail joint on work piece by the help of sketches (on both parts)
Q. 31: Which tools should a carpenter keep with him for general works? Write at least Name of 10 tools.
Q. 32: Write short notes on:
A. Chisels: B. Hammer: C. Hand saw:
Q. 33: Explain the surface treatment process in woodworking.

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Instructions:

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2. Answer any six question from section B, each question carries five marks.
3. Answer all question from section C, each question carries ten marks.

Section – A

20X01 = 20 Marks

Q. 1: Which tool is used to cut wood in round shape?

A. Indian Hand Saw
B. Compass Saw
C. Japanese Hand Saw
D. Hack Saw

Ans. B

Q. 2: 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

Ans. B

Q. 3: Which file is used to sharpen the Indian hand saw?

A. Flat file
B. Round file
C. Half round file
D. triangular file

Ans. D

Q. 4: The sharpening angle of the chisel should be:

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

Ans. B

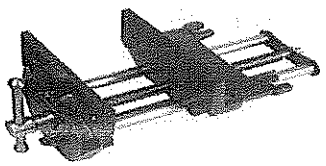
Q. 5: If the size of a board is 3.5 meter long and 15 centimeter wide, then total area of the board would be:

A. 5.25 m^2
B. 0.525 m^2
C. 52.5 m^2
D. 1.5 m^2

Ans. B

Q. 6: Tick the right name of the tool shown in the figure below :

A. Metal vice
B. Pipe vice
C. Carpenter vice
D. None of these



Ans. C

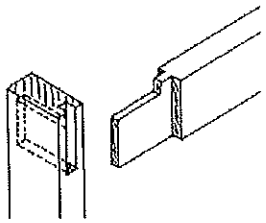
Q. 7: The marking gauge is used to:

A. Mark parallel line on the wood
B. Mark round line on the wood
C. Both of above
D. None of these

Ans. A

Q. 8: Tick the right name of the joint shown in the figure below:

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



Ans. C

Q. 9: 1 Inch equals to:
A. 35.4mm
B. 25.4mm
C. 2.54mm
D. 3.54mm

Ans. B

Q. 10: The smallest mark on a roll meter is:
A. Millimeter
B. Meter
C. Inch
D. Foot

Ans. A

Q. 11: How many pieces of size 300mm x 600mm x 18mm can be cut from one sheet of size 1240mm x 2460mm x 18mm?
A. 20 pieces
B. 16 Pieces
C. 24 Pieces
D. 15 pieces

Ans. B

Q. 12: When using a hammer to strike a nail, the strength mainly comes from your:
A. Shoulder
B. Elbow
C. Hand
D. Wrist

Ans. D

Q. 13: Identify the tool shown below:
A. Bar clamp
B. Pressure clamp
C. Mini clamp
D. C clamp

Ans. D

Q. 14: What tool would you use to remove the material for a hinge slot in a door?
A. Chisel
B. Hand saw
C. Circular saw
D. Utility knife

Q. 15: What type of clamp is best used when clamping corners of a picture frame together?
A. C clamp
B. Bar clamp
C. Pipe clamp
D. Band clamp

Ans. D

Q. 16: Which tools is used to mark 45^0 line on work piece?
A. Try Square
B. Mitre Square
C. Bevel Square
D. None of these

Ans. B

Q. 17: 1 Decimeter equals to:
A. 1mm
B. 10mm
C. 100mm
D. 0.1mm

Ans. C

Q. 18: What is the perimeter of a square with sides 1.2 meter and 2440mm long?
A. 6280 mm
B. 7.280 meter
C. 72.80 meter
D. 6.280 meter

Ans. B

Q. 19: Which tool is best suited for transferring a 35^0 angle from one piece to another piece?
A. Try square
B. Marking gauge
C. Mitre square
D. Bevel square

Ans. D

Q. 20: Which type of fire extinguisher is used for wood?
A. A-type
B. B-type
C. C-type
D. D-type

Ans. A

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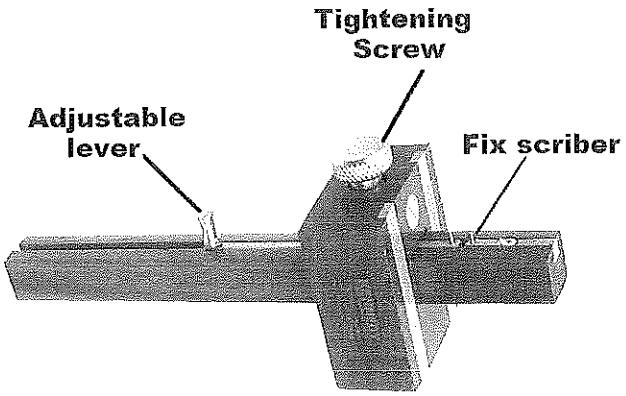
Section – B

06X05 = 30 Marks

Q. 21: Draw a diagram of two hand tools and name their parts accordingly:
ANS: A. Marking/ Mortice Gauge:

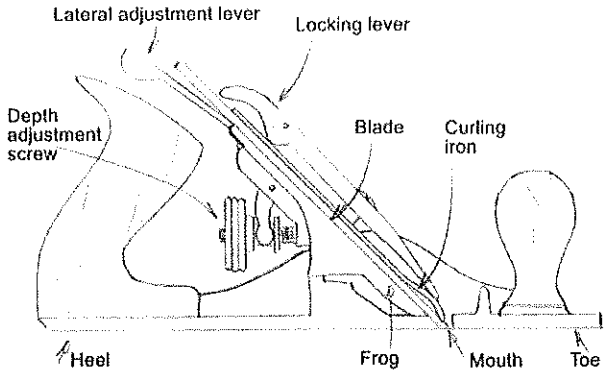


The marking gauge is used for parallel marking of width and thickness side.
It has three major parts:

1. **Tightening screw**: it is used to tight the adjustable lever on a fix position.
2. **Adjustable lever**: it is used to set the dimension and mark.
3. **Fix scriber**: it always fixed on its position.

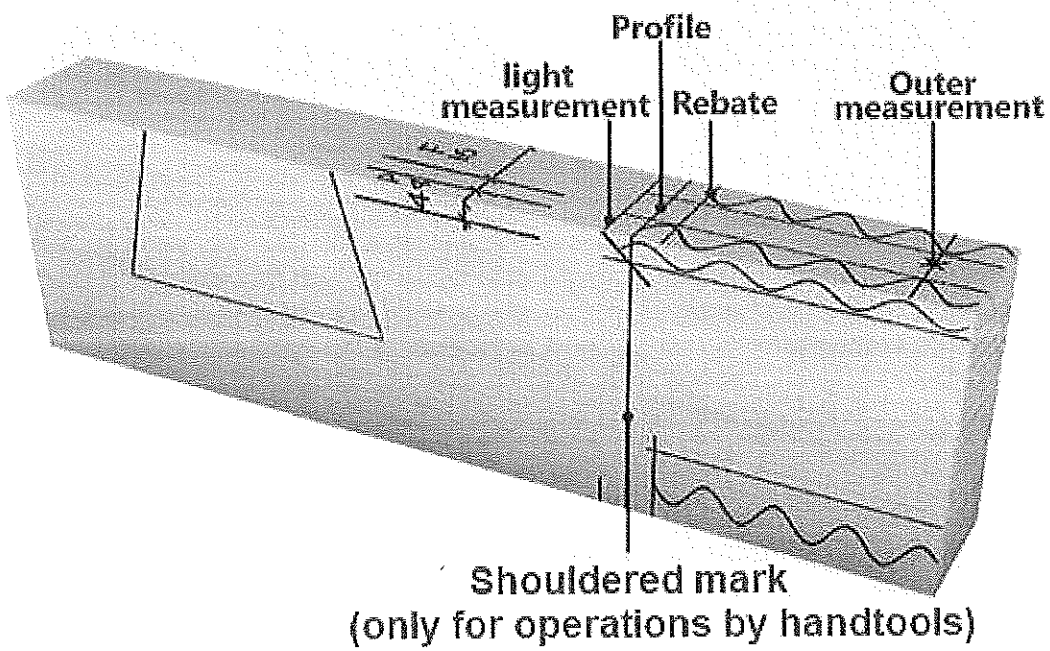
B: Jack Planer:

Jack planer is used to make smooth surface of the work piece. The major component of a jack planer is listed below:



1. **Heel:** Heel is used to hold and force the planer in forward and backward direction.
2. **Blade (Knife):** Blade is used to remove the material from the work piece.
3. **Depth Adjustment Screw:** The depth of material removing can be adjusted by the help of this screw.
4. **Lateral Adjustment Lever:** by the help of this screw, we can tilt the knife.
5. **Locking Lever:** Locking lever is used to tightening of the knife on the fix position.

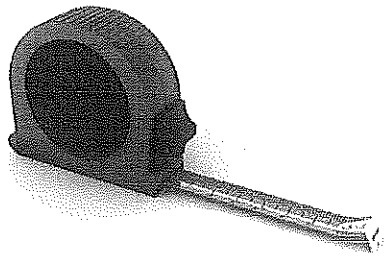
Q. 22: Write the name of the measurement shown in the diagram:



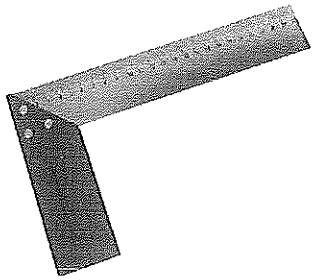
Q. 23: **Sketch 5 different tools which are used for the marking process and name them accordingly.**

Ans: Following tools are used for the marking process:

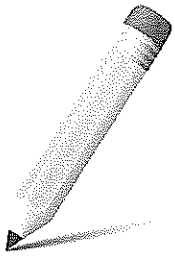
Roll meter:



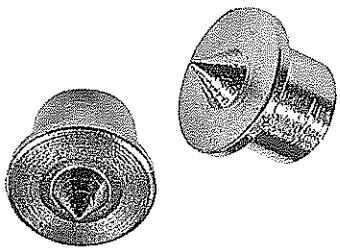
Try square:



Pencil:



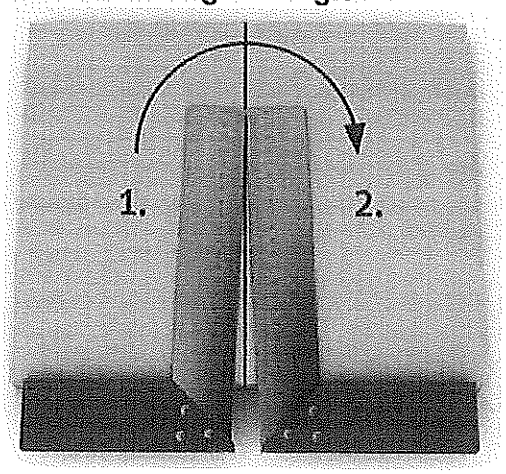
Dowel Marker:



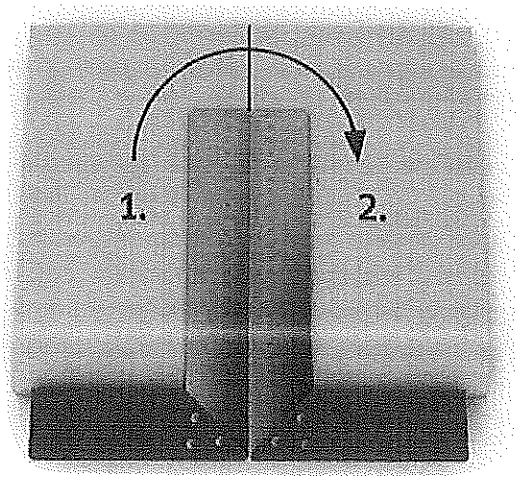
Roler:

Q. 24: How will you check if the try square is correct or not? Explain with the help of a diagram.

Ans: Checking the angle



Angles can be easily and very accurately checked by folding them over on a straight edge, since inaccuracies are doubled.



Incorrect

Correct

Q. 25: What kind of safety precautions should be kept in mind while working with carpentry hand tools?

Ans: Following safety points should be keep in mind while working in workshop:

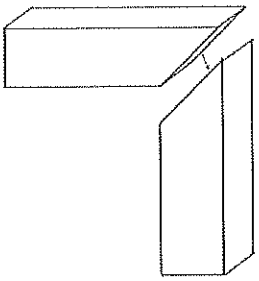
1. Knowledge of the tools that are you going to use.
2. How to handle the tools properly?
3. Do not play with tools while working with tools.
4. Always wear safety items while working.
5. Keep your work area tidy.

6. Always clean the work station after work finish.

Q. 26: Sketch any two joints and name them accordingly.

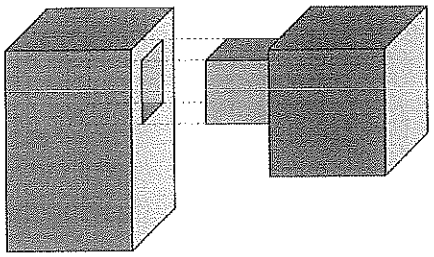
Ans: A. Mitre Joint

A miter joint is a joint made by beveling each of two parts to be joined, usually at a 45° angle, to form a corner, usually a 90° angle.



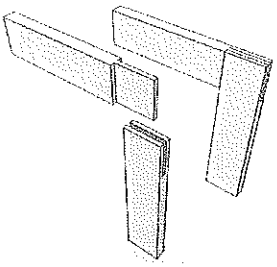
B. Tenon & Mortice Joint

A mortise (or mortice) and Tenon joint is a type of joint that connects two pieces of wood or other material. A mortise is a cavity cut into a timber to receive a Tenon. A Tenon is a projection on the end of a timber for insertion into a mortise. Usually the Tenon is taller than it is wide.



C. Bridle joint

A bridle joint is a woodworking joint, similar to a mortise and Tenon, in that a Tenon is cut on the end of one member and a mortise is cut into the other to accept it.



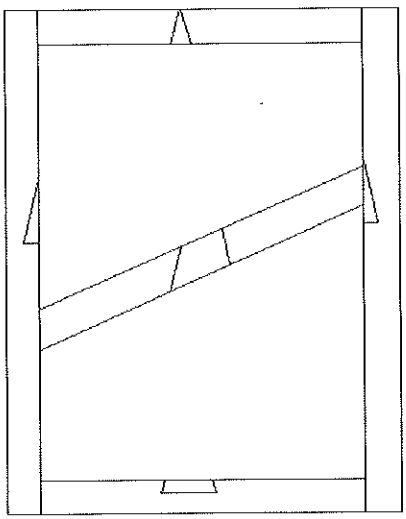
Q. 27: Write the name of any five holding and supporting tools.

Ans: followings are the holding (Tightening) and supporting tools:

1. T- Bar Clamp
2. F- Clamp
3. Band Clamp
4. Screw
5. Nails

Q. 28: Mark the tringle signs on the picture shown.

Ans:



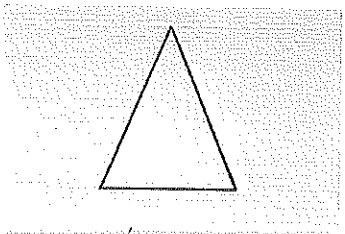
Section – C

05X10 = 50 Marks

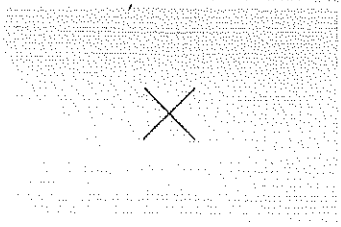
Q. 29: Describe 10 different types of symbols used in the marking process.

Ans: Following symbols are used in marking process:

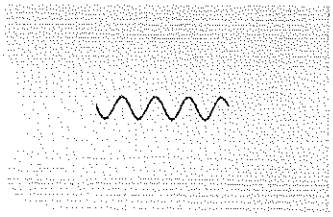
1. **Tringle:** The carpenter's triangle is used to draw together work parts. This process serves to avoid confusion of the individual work parts.



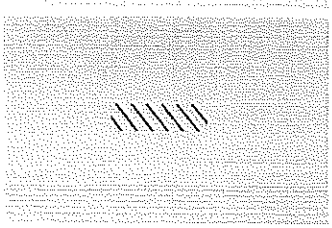
2. **Cross:**
   The scope of this symbol is:
   - Through-out cut
   - Continuous separation cut: Final cut, cut-off cut



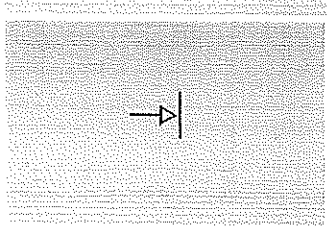
3. **Wave Line:**
   The scope of this symbol is:
   - Material that is removed through-out



4. **Hatching:**
   The scope of this symbol is:
   - Material that is partially removed, not through-out, e.g. hatching for notches

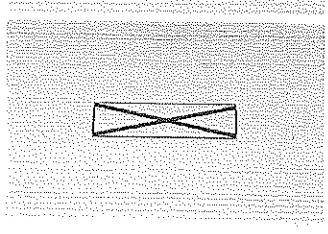


5. **Arrow:**
   The scope of this symbol is:
   - Limitation of machining operations, e.g. for groove, rebate



6. **Cross exactly across the diagonal**
   The scope of this symbol is:
   - Mortice hole

7. **Line (long stroke)**:
   The scope of this symbol is:
   - Housing Mortice



8. **Machining Depth**
   The fields of application of this marking are:
   - Indication of the depth of a mortise hole
   - Indication of drilling depth
   - Indication of groove depth

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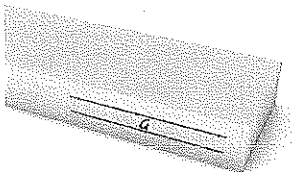
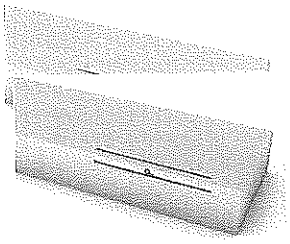
Ø10 /26

9. Bore / Round Hole:
The scope of this symbol is:
- Specification of the diameter of tool including drilling depth

10. Groove
The edges of the groove are indicated symbolically by lines. The "G" denotes the groove



11. Rebate:
The edges of the rebate are indicated symbolically by lines. The "R" indicates the rebate. A decorative rebate is also called a rebate, not a profile.



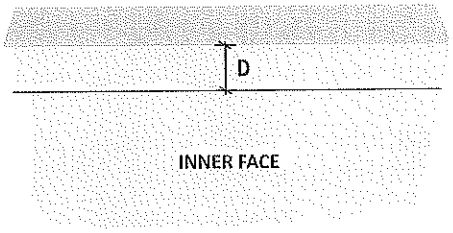
12. Profile:
The edges of profile are indicated symbolically by lines. The "P" denotes the profile.

Q. 30: Write the steps used to mark the dovetail joint on work piece by the help of sketches (on both parts).

Ans:

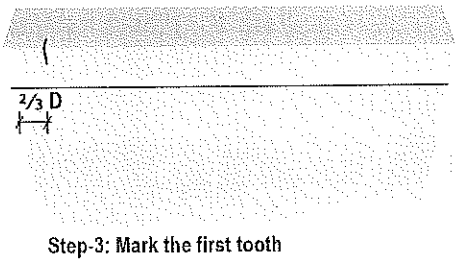
Proceed as follows:

1. Put the work pieces together and sand the inner surface.
2. Mark the work piece thickness with the help of a marking gauge on the dovetail and tooth piece.



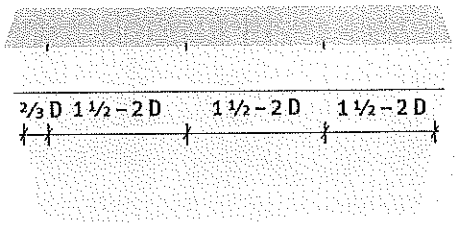
Step-2: Mark the thickness of the wood

3. Start the dividing of the teeth with an end or corner tooth. It should be apart 2/3 of the work piece thickness.



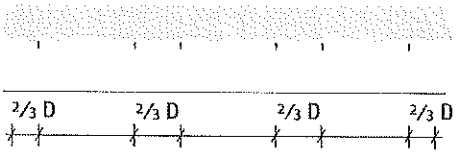
Step-3: Mark the first tooth

4. Divide the rest distance in equal parts. One part should be between 1.5 and 2 times the work piece thickness.



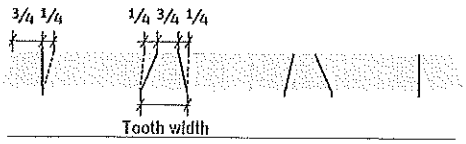
Step-4: Devide the rest distance

5. Mark the single teeth within the marked parts. The tooth width equals 2/3 times of work piece thickness.



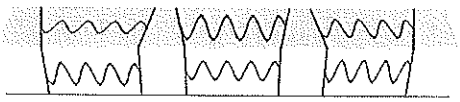
Step-5: Mark the remaining teeth

6. Mark the taper of the teeth with the help of a bevel. The taper equals ¼ of tooth width.



Step-6: Mark the taper of the teeth

7. Transfer the divisions with a try square to the surface, mark the removing area with the wave line

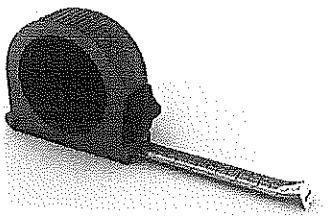


Step-7: Transfer division to surface

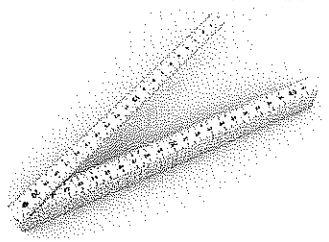
Q. 31: Which tools should a carpenter keep with him for general works. Write at least name of 10 tools.

Ans: Following tools a carpenter should be keep with him:

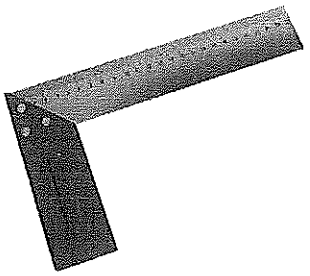
1. **Roll meter:**
   This tool is used to measure the dimension of the projects.



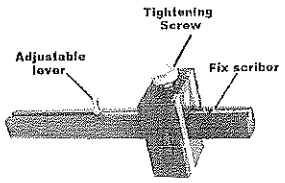
2. **Double meter:**
   The collapsible double meter consists of short wooden, plastic or metal strips, which are connected by a swivel joint.



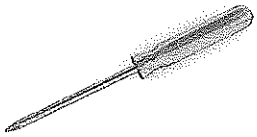
3. **Try Square:**
   The angle is used to check right-angled parts for tearing as well as to adjust the inner and outer edge of the stops at 90° to the stop.



4. **Marking Gauge:**
The marking gauge is used for parallel marking of width and thickness side.

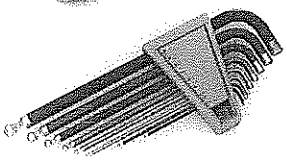


5. **screwdrivers:**
There are screwdrivers in different design. With this tool screws can be screwed in by hand.

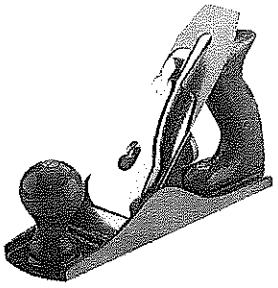


6. **Wrench spanner:**
The wrench spanner can be set to different sizes. For this reason, it is suitable for metric and inch screws and nuts.

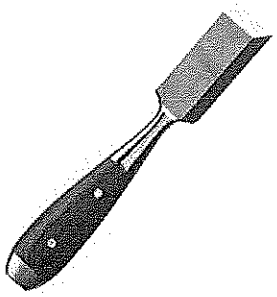
7. **Allen Key Set:**
Set of angular pins for hexagon socket (Allen key set). There are fillets with long or short length.



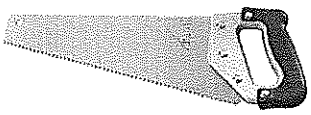
8. **Jack Planer:**
Jack planer is used to make smooth surface of the work piece.



9. **Chisel:**
It is used to remove the material from the work piece or to cut the pocket.



10. **Hand Saw:**
It is used to cut the work piece.

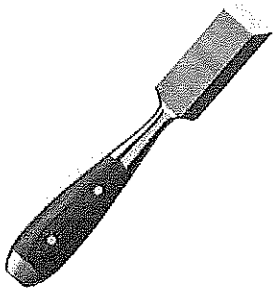


Q. 32: Write short notes on:

Ans: A. Chisels:

A chisel is a tool with a characteristically shaped cutting edge of blade on its end, for carving or cutting a hard material such as wood by hand, struck with a mallet, or mechanical power. The handle and blade of some types of chisel are made of metal or of wood with a sharp edge in it.

Chiseling use involves forcing the blade into some material to cut it. The force may be applied by pushing by hand, or by using a mallet or hammer.



B. Hammer:

A hammer is a tool that is used to strike or to force on another objects. It consists of a metal body and a wooden handle.

C. Hand saw:

In woodworking and carpentry, hand saws, also known as "panel saws", are used to cut pieces of wood into different shapes. This is usually done in order to join the pieces together and carve a wooden object.

Q. 33: Explain the surface treatment process in woodworking.

Ans: Surface treatment process:

Surface waters

Registration No.: .....

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

School of Carpenter Skills

B. Voc. Program, Summer Semester (2018-19)

1st Semester, End-Sem. Examination

Course Code: SCS1102 **Time: 3 Hours**

Course Name: Handy Machines **Max. Marks: 100**

Instruction:

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

2.Answer 6 questions out of 8 questions from section B, each question carries five marks.

3.Answer all questions from section C, each question carries ten marks.

Section – A

20X01 = 20 Marks

Q.1.Which one of the following is the diameter of saw blade used in Circular Hand saw TS 55 REBQ?

(A) 160 mm (B) 150 mm

(C) 200 mm (D) 250 mm

Q.2.Which one of the following is the accessory used in Circular Hand saw TS 55 REBQ?

(A) Trim stop (B) Guide rail

(C) Splinter Guard (D) Both (B) & (C)

Q.3.Which one of the following is the diameter of cutter used for 4*20 domino?

(A) 10 mm (B) 4 mm

(C) 8 mm (C) 5 mm

Q.4.Which one of the following is the accessory used in Lamello classic X?

(A) Anti-slip Pad (B) Handrail fence

(C) Spacer (D) Both (A) & (C)

Q.5.Which one of the following is the diameter of cutter used in Lamello X?

(A) 60 mm (B) 70 mm

(C) 100 mm (D) None of these.

Q.6.Which one of the following machine is used for making biscuit joint?

(A) Circular saw (B) Jig saw

(C) Lamello classic X (D) Router

Q.7.Which one of the following is the accessory used in Router machine?

(A) Collect (B) Centering Mandrel

(C) Copying Ring (D) All of these.

Q.8. Which one of the following is the accessory used in Jig saw?

(A) Base runners (B) Guide rail

(C) Trim stop (D) Both (A) & (B)

Q.9.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.10.Which one of the following is the maximum depth taken by Circular Hand saw TS 55 REBQ?

(A) 20 (C) 30

(C) 55 (D) 50

Q.11.Which one of the following machine is used for making chamfer?

(A) Router (B) Edge Router

(C) Jig Saw (D) Circular saw

Q.12. Which one of the following is the depth taken while using 4 mm cutter in Domino machine?

(A) 28 mm (B) 25 mm

(C) 12 mm (D) 20 mm

Q.13. Which one of the following accessory is used for quick diagonal cuts and splinter free cuts?

(A) Handrail fence (B) Splinter guard

(C) Parallel side fence (D) Guide rails

Q.14.Which one of the following is the angular range of circular hand saw TS 55 REBQ?

(A) 1 to 45 degree (B) -1 to -45 degree

(C) -1 to -47 degree (D) None of these

Q.15.Which one of the following is the maximum depth of cut taken by Circular saw TS 55 REBQ?

(A) 43 mm (B) 45 mm

(C) 55 mm (D) None of these

Q.16.Which one of the following machine is used for making biscuit joint and grooves?

(A) Jig Saw (B) Domino

(C) Lamello Classic X (D) Both (B) & (C)

Q.17.Which one of the following is the maximum depth of cut taken at 45 degree in Circular Hand Saw TS 55 REBQ ?

(A) 55 mm (B) 45 mm

(C) 43 mm (D) 50 mm

Q.18.Which one of the following is the machine in which tool does not change for all operations?

(A) Router (B) Jig saw

(C) Lamello classic X (D) Circular saw

Q.19.Which one of the following is maximum biscuit size used by Lamello classic X?

(A) 12 mm (B) 15 mm

(C) 20 mm (D) 10 mm

Q.20.Which one of the following is the minimum depth of cut used by Domino machine?

(A) 10 mm (B) 8 mm

(C) 12 mm (D) None of these

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Section – B

06X05 = 30 Marks

Q.21.What are five steps of changing a tool in Domino machine?

Q.22.Name and describe five safety gears used while working on Handy machines.

Q.23.Describe five benefits of making biscuit joint with Lamello classic X.

Q.24.What are the specifications of cutter of Lamello classic X? Also draw a diagram of the cutter.

Q.25.What are five advantages and properties of Lamello classic X?

Q.26.Draw the diagram of Saw blade of Circular Hand Saw TS 55 REBQ.Also mention the diameter and cutting width.

Q.27.What are the steps for making 2 mm chamfer with the Edge Router Machine?

Q.28. Describe the work steps of changing the tool of a Hand router.

Section - C

10X05 = 50 marks.

Q.29.What is Lamello biscuit machine? Draw the diagrams of Lamello biscuit and mention the different sizes of biscuit.

Q.30.What is Domino machine? Draw the diagrams of Domino dowels and mention the all different sizes of Domino dowels.

Q.31.What are the steps for cutting panel by Circular Hand Saw using guide rail?

Q.32.Describe the steps for making the pocket using the Hand router machine on the panel.

Q.33.What are the benefits for using the dust collector while working with Handy machine?

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

School of Carpenter Skills

B. Voc. Program, Summer Semester (2018-19)

1st Semester, End-Sem. Examination

Course Code: SCS1102 **Time: 3 Hours**

Course Name: Handy Machines **Max. Marks: 100**

Instruction:

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

2.Answer 6 questions out of 8 questions from section B, each question carries five marks.

3.Answer all questions from section C, each question carries ten marks.

Section – A

20X01 = 20 Marks

Q.1.Which one of the following is the diameter of saw blade used in Circular Hand saw TS 55 REBQ?

(A) 160 mm (B) 150 mm

(C) 200 mm (D) 250 mm (A)

Q.2.Which one of the following is the accessory used in Circular Hand saw TS 55 REBQ?

(A) Trim stop (B) Guide rail

(C) Splinter Guard (D) Both (B) & (C) (D)

Q.3.Which one of the following is the diameter of cutter used for 4*20 domino?

(A) 10 mm (B) 4 mm

(C) 8 mm (C) 5 mm (B)

Q.4.Which one of the following is the accessory used in Lamello classic X?

(A) Anti-slip Pad (B) Handrail fence

(C) Spacer (D) Both (A) & (C) (D)

Q.5.Which one of the following is the diameter of cutter used in Lamello X?

(A) 60 mm (B) 70 mm

(C) 100 mm (D) None of these (C)

Q.6.Which one of the following machine is used for making biscuit joint?

(A) Circular saw (B) Jig saw

(C) Lamello classic X (D) Router (C)

Q.7.Which one of the following is the accessory used in Router machine?

(A) Collect (B) Centering Mandrel

(C) Copying Ring (D) All of these. (D)

Q.8. Which one of the following is the accessory used in Jig saw?

(A) Base runners (B) Guide rail

(C) Trim stop (D) Both (A) & (B) (D)

Q.9.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)

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Q.10.Which one of the following is the maximum depth taken by Circular Hand saw TS 55 REBQ?

(A) 20 (C) 30

(C) 55 (D) 50 (C)

Q.11.Which one of the following machine is used for making chamfer?

(A) Router (B) Edge Router

(C) Jig Saw (D) Circular saw (B)

Q.12. Which one of the following is the depth taken while using 4 mm cutter in Domino machine?

(A) 28 mm (B) 25 mm

(C) 12 mm (D) 20 mm (D)

Q.13. Which one of the following accessory is used for quick diagonal cuts and splinter free cuts?

(A) Handrail fence (B) Splinter guard

(C) Parallel side fence (D) Guide rails (D)

Q.14.Which one of the following is the angular range of circular hand saw TS 55 REBQ?

(A) 1 to 45 degree (B) -1 to -45 degree

(C) -1 to -47 degree (D) None of these (C)

Q.15.Which one of the following is the maximum depth of cut taken by Circular saw TS 55 REBQ?

(A) 43 mm (B) 45 mm

(C) 55 mm (D) None of these (C)

Q.16.Which one of the following machine is used for making biscuit joint and grooves?

(A) Jig Saw (B) Domino

(C) Lamello Classic X (D) Both (B) &(C) (C)

Q.17.Which one of the following is the maximum depth of cut taken at 45 degree in Circular Hand Saw TS 55 REBQ ?

(A) 55 (B) 45

(C) 43 (D) 50 (C)

Q.18.Which one of the following is the machine in which tool does not change for all operations?

(A) Router (B) Jig saw

(C) Lamello classic X (D) Circular saw (C)

Q.19.Which one of the following is maximum biscuit size used by Lamello classic X?

(A) 12 mm (B) 15 mm

(C) 20 mm (D) 10 mm (C)

Q.20.Which one of the following is the minimum depth of cut used by Domino machine?

(A) 10 mm (B) 8 mm

(C) 12 mm (D) None of these (C)

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Section – B

06X05 = 30 Marks

Q.21.What are five steps of changing a tool in Domino machine?

ANS: Steps for changing the tool of Domino machine are:

1.Always disconnect from the mains to change the cutter. Then raise the unlocking lever using an open ended spanner.

2.Separate the motor unit and guide frame.

3.Hold the spindle lock on the motor unit, loosen the cutter using the open ended spanner and screw in the new cutter using the open ended spanner, keeping the spindle lock pressed. Then release the spindle lock.

4.Before inserting a new cutter, ensure that the machine, the guide frame and guides are clean and free from chippings.

Q.22.Name and describe five safety gears used while working on Handy machines and describe them.

ANS: Safety gears used while working on Handy machine are described below:

1.Ear Muffle: It protects from loud sound. We wear this while working on machine.

2.Safety shoes: We always wear this when we go to training center and it protects from injury when heavy objects fall on leg.

3.Safety googles: It protects from dust and pieces while maching. It is not always necessary to wear safety googles while working on machine.

4.Ear plug: Ear muffle and ear plug are used for preventing from loud sound.It is very comfortable to wear ear plug.

5.Dust mask: We wear this while cleaning the workshop and when dust is coming while maching.

Q.23.Describe five benefits of making biscuit joint with Lamello classic X.

ANS:

Benefits of making joint with Lamello classic X:

1.Adjust groove position to exact center of the work piece.

2.Gives tolerance to joint for shifting of work piece in assembly.

3.Easy joining of laterally off-set work piece.

4.New multifunctional stop square with smooth running, precise guidance.

5.For quick exact setting of the groove position.

Q.24.What are the specification of cutter of Lamello classic X? Also draw the diagram of cutter.

ANS: Specification of cutter of Lamello classic X are:

1.Diameter = 100 mm

2.Thickness = 4 mm

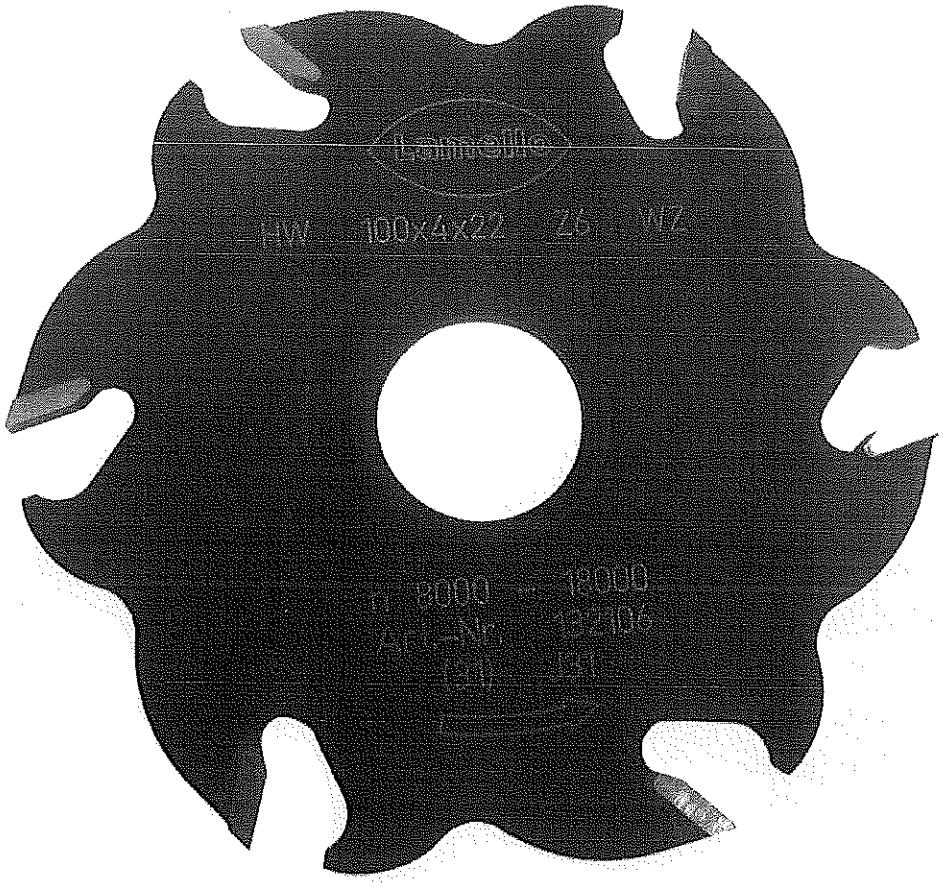
3.Inner whole diameter = 22 mm

4.Carbide tipped

5.Teeth = 6 with reversing teeth.

6.Maximum depth = 20 mm

7.Low maintaince cost.



Q.25.What are five advantages and properties of using Lamello classic X?

ANS: Advantages and properties of Lamello classic X are mentioned below:

1.Powerful motor 780 W ergonomic slim shape.

2.Base plate is flush on the both sides for efficient positioning of the machine on the work piece.

3. Multifunctional stop square.

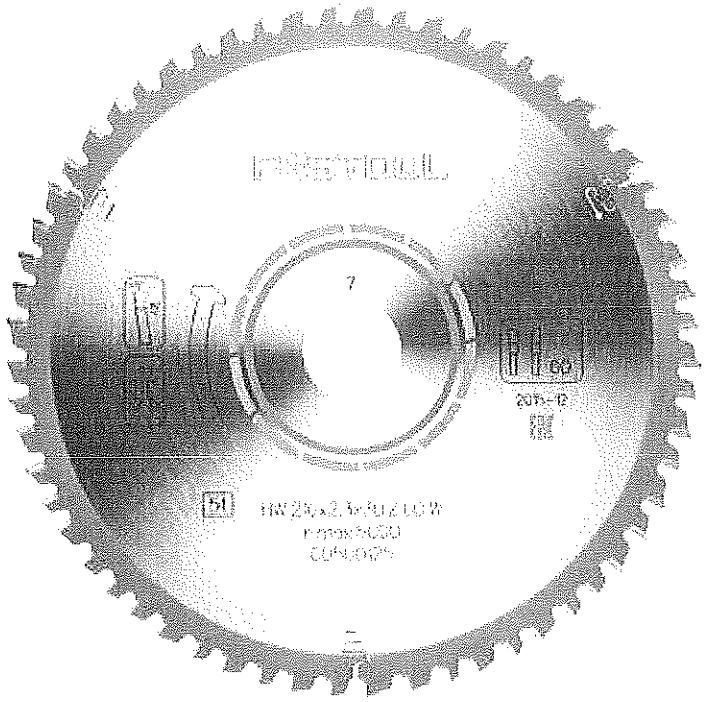
4.Swivelling front 0-90 degree.

5.Rotating depth adjuster with 6 standard depths.

Q.26.Draw the diagram of Saw blade of Circular Hand Saw TS 55 REBQ.Also mention the diameter and cutting width.

ANS: Diameter = 160 mm

Cutting width = 2.2 mm



Q.27.What are the steps for making 2 mm chamfer with the Edge Router Machine?

ANS: Steps for making the 2 mm chamfer with edge router are mentioned below:

Step 1: Take Edge router machine and connect with dust collector for electrical power and dust collection.

Step 2: Insert chamfer tool in the machine.

Step3: Make chamfer on the rough work piece and check the dimension of chamfer.

Step 4: Set 2 mm dimension in the machine

Step 5: Clamp the work piece and make chamfer with Edge router.

Q.28. Describe the work steps of changing the tool of a Hand router.

ANS: Work steps of changing the tool of a Hand router:

Step 1: Take Hand router machine.

Step 2: Press the lock button and open the tool with spanner.

Step 3: Turn the lock one time and open tool with hand.

Step 4: If tool is not open then open with spanner.

Step 5: At last open the tool and insert the tool in the machine.

Section - C

10X05 = 50 marks.

Q.29.What is Lamello biscuit machine? Draw the sketches of Lamello biscuit and mention the all different sizes of biscuit.

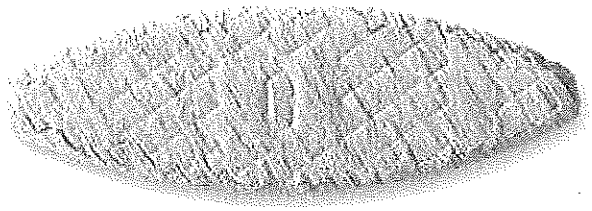
ANS: Lamello biscuit machine is used for making biscuit joint, grooves, wood repairs and cut expansion gaps.

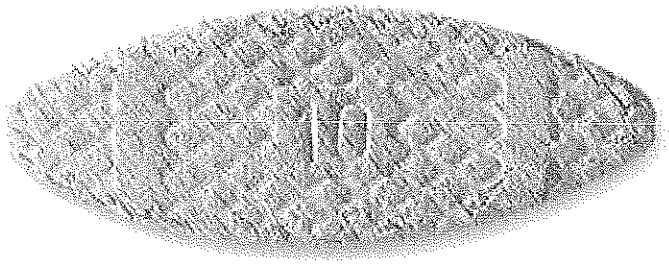
Sizes of lamella biscuit are:

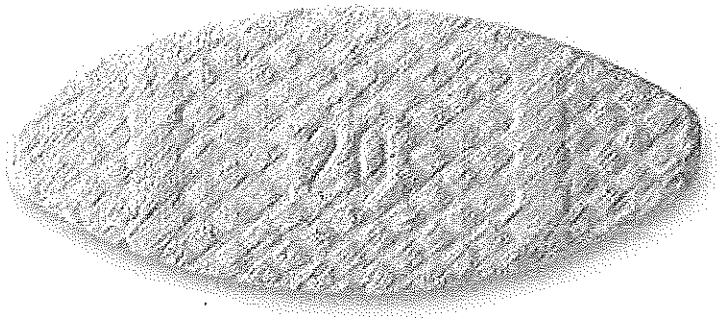
1.Lamello 0

2.Lamello 10

3.Lamello 20







Q.30.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*2o mm
2. 5*30 mm
3. 6*40 mm
4. 8*40 mm
5. 10*50 mm

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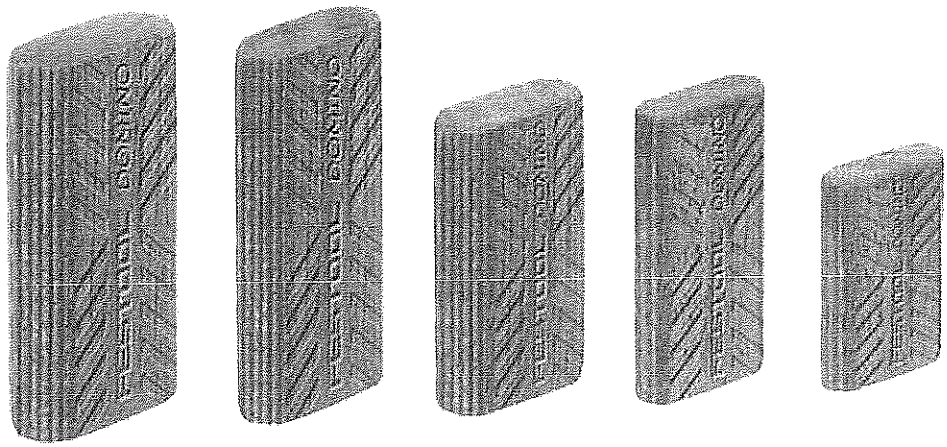

Q.31.What are the steps for cutting panel by Circular Hand Saw using guide rail?

ANS: Work steps of cutting a panel by circular Hand Saw with the help of guide rail are mentioned below:

Step 1: Take required panel from the storage.

Step 2: Follow the triangle law and mark according to ratio.

Step 3: Mark a fixed dimension on two sides of work piece.

Step 4: Place the guide rail on the scribe line and clamp the guide rail.

Step 5: Put the circular saw on the guide rail and set the required depth.

Step 6: Connect the dust collector with the circular saw for electrical power and dust collection.

Step 7: Start the machine and cut the given panel.

Q.32.Describe the steps for making the pocket using the Hand router machine on the panel.

ANS: Steps for making the pocket using the Hand router machine on a panel are mentioned below:

Step 1: Take hand router machine.

Step 2: Insert tool required according to the size of pocket.

Step 3: Clamp the panel on the working bench.

Step 4: Set router machine on the work piece and adjust parallel side fence according to the pocket.

Step 5: Connect machine with the dust collector.

Step 6: Set depth step by step and make groove.

Q.33.What are the benefits for using the dust collector while working with Handy machine?

ANS: Due to following reason, it is necessary to use Dust collector while working with Handy machine:

1. It saves from dust which goes into eyes while maching.
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 increases the machine life.

Registration No.: .....

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

School of Carpenters Skills

B. Voc. Program, Summer Semester (2017-18)

I Semester, End-Sem. Examination

Course Code: SCS1103 **Time: 3 Hours**

Course Name: Standard Machine **Max. Marks: 100**

Instruction:

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

Section – A

20X01 = 20 Marks.

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

(a) Universal (b) solid crosscut

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

Q.2. There are _____ no. of teeth in universal saw blade.

(a) 96 (b) 48

(c) 28 (d) none of them

Q.3. There are _____ no. of teeth in solid wood cross cut saw blade.

(a) 96 (b) 48

(c) 28 (c) 72

Q.4. Which one of the following is the working table width of surface planer?

(a) 520 (b) 560

(c) 620 (d) none of them

Q.5. Which one of the following is the cutter block speed of surface planer?

(a) 500 rpm (b) 5000 rpm

(c) 2500 rpm (d) 4500 rpm

Q.6. Which one of the following is maximum depth of cut of surface planer?

(a) 2mm (b) 6 mm

(c) 8 mm (d) 5 mm

Q.7. What is the maximum width of work piece to be machined in surface planer?

(a) 300 mm (b) 630 mm

(c) 500 mm (d) none of them

Q.8. What is the minimum width of work piece to be machined in a thickness planer?

(a) 8 mm (b) 5 mm

(c) 10 mm (d) none of them

Q.9. Which one of the following machines has both infeed table & worktable?

(a) Surface planer (b) thickness planer

(c) panel saw (d) band saw

Q.10. Which one of the following is the distance between riving knife and main saw in panel saw?

(a) 8 mm (b) 4 mm

(c) 6 mm (d) 5 mm

Q.11. Which one of the following is the minimum length of work piece to be machined in thickness planer?

(a) 300 mm (b) 260 mm

(c) 150 mm (d) none of them

Q.12. What is the maximum cutting height of band saw minimax s 600 P?

(a) 360 mm (b) 300 mm

(c) 260 mm (d) none of them

Q.13. What is the maximum cutting width of band saw minimax s 600 P?

(a) 500 mm (b) 560 mm

(c) 580 mm (d) 600 mm

Q.14. Which one of the following is the worktable dimension of band saw minimax s 600 P?

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

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

Q.15. Which one of the following machines is used for miter cut?

(a) panel saw (b) surface planer

(c) thickness planer (d) none of them

Q.16. Which one of the following is the cutting width of panel saw?

(a) 1200 mm (b) 1000 mm

(c) 1300 mm (d) 1400 mm

Q.17. Which one of the following is the table length of panel saw.

(a) 2500 mm (b) 3000 mm

(c) 1200 mm (d) none of them

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Q.18. Which one of the following is the cutting length of panel saw?

(a) 2500 mm (b) 1300 mm

(c) 3000 mm (d) 2905 mm

Q.19. Which one of the following is the total worktable length of surface planer?

(a) 2700 mm (b) 2900 mm

(c) 2750 mm (d) 2760 mm

Q.20. Which one of the following is the exhaust outlet diameter of surface planer?

(a) 120 mm (b) 160 mm

(c) 200 mm (d) none of them

Section – B

06X05 = 30 Marks

Q.21. Write down the definition and applications of panel saw machine.

Q22. Write down the steps to change the blade of panel saw.

Q.23. Write down the difference between main saw blade and scoring saw blade.

Q.24. Write down five features of surface planer.

Q.25. Write down the working process of thickness planer.

Q.26. How will you react to the situation if wood is jammed in the cutting area of thickness planer?

Q.27. Write down the applications of band saw and mention the advice that you should follow while working on the band saw.

Q.28. Write down the steps to start the band saw machine.

Section – C

05X10 = 50 Marks

Q.29. What are the types of saw blade used in panel saw and what are their applications?

Q.30. Write down all the safety precautions and working steps of surface planer.

Q.31. Draw a labelled diagram of band saw and list all the safety measures that you should follow while working on it.

Q.32. Briefly describe the thickness planer machine.

Q.33. What are the general safety rules that you should follow in the workshop?

Registration No.: .....

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

School of Carpenters Skills

B. Voc. Program, Summer Semester (2017-18)

I Semester, End-Sem. Examination

Course Code: SCS1103 **Time: 3 Hours**

Course Name: Standard Machine **Max. Marks: 100**

Instruction:

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

Section – A

20X01 = 20 Marks

20 objective type questions, each question carries 01 mark.

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 them. (a)

Q.2. There are _____ no. of teeth in universal saw blade.

(a) 96 (b) 48

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

Q.3. There are _____ no. of teeth in solid wood cross cut saw blade.

(a) 96 (b) 48

(c) 28 (c) 72 (a)

Q.4. Which one of the following is the working table width of surface planer?

(a) 520 (b) 560 (a)

(c) 620 (d) none of them

Q.5. Which one of the following is the cutter block speed of surface planer?

(a) 500 rpm (b) 5000 rpm

(c) 2500 rpm (d) 4500 rpm (b)

Q.6. Which one of the following is maximum depth of cut of surface planer?

(a) 2mm (b) 6 mm

(c) 8 mm (d) 5 mm (c)

Q.7. 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 them (b)

Q.8. What is the minimum width of work piece to be machined in a thickness planer?

(a) 8 mm (b) 5 mm

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

Q.9. Which one of the following machine has both infeed table & worktable?

(a) Surface planer (b) thickness planer

(c) panel saw (d) band saw (a)

Q.10. Which one of the following is the distance between riving knife and main saw in panel saw?

(a) 8 mm (b) 4 mm

(c) 6 mm (d) 5 mm (d)

Q.11. Which one of the following is the minimum length of work piece to be machined in thickness planer?

(a) 300 mm (b) 260 mm

(c) 150 mm (d) none of them (b)

Q.12. What is the maximum cutting height of band saw minimax s 600 P?

(a) 360 mm (b) 300 mm

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

Q.13. What is the maximum cutting width of band saw minimax s 600 P?

(a) 500 mm (b) 560 mm

(c) 580 mm (d) 600 mm (c)

Q.14. Which one of the following is the worktable dimension of band saw minimax s 600 P?

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

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

Q.15. Which one of the following machine is used for miter cut?

(a) panel saw (b) surface planer

(c) thickness planer (d) none of them (a)

Q.16. Which one of the following is the cutting width of panel saw?

(a) 1200 mm (b) 1000 mm

(c) 1300 mm (d) 1400 mm (c)

Q.17. Which one of the following is the table length of panel saw.

(a) 2500 mm (b) 3000 mm

(c) 1200 mm (d) none of them (b)

Q.18. Which one of the following is the cutting length of panel saw?

(a) 2500 mm (b) 1300 mm

(c) 3000 mm (d) 2905 mm (d)

Q.19. Which one of the following is the total worktable length of surface planer?

(a) 2700 mm (b) 2900 mm

(c) 2750 mm (d) 2760 mm (c)

Q.20. Which one of the following is the exhaust outlet diameter of surface planer?

(a) 120 mm (b) 160 mm

(c) 200 mm (d) none of them (a)

Section – B

06X05 = 30 Marks

06 long answer type questions, each question carries 05 marks.

(Attempt any 06 questions out of 08 questions)

Q.21. Write down the definition and applications of panel saw machine.

Panel saw:- it is a wood working machine which is used to cut panels, profiles, solidwood, mdf, laminates etc. it is used to cut materials both horizontally and vertically. Panel saws can have one main 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 mitre cut.
- It is use to make groove.

Q22. Write down the steps to change the blade of panel saw?

Blade changing procedure:-

- 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, and saw shaft.
- Unscrew the nut with ring spanner in the clockwise direction.
- Place the saw blade in the saw drive shaft and screw it by hand.
- Lastly tight the nut by ring spanner.

Q.23. Write down the difference between main saw blade and scoring saw blade.

Main saw blade:-

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

Scoring saw blade:-

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

Q.24. Write down five features of surface planer.

- 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.
- This machine is equipped with safety guard that protects our hands and finger from striking with cutter head.

Q.25. Write down the working process of thickness planer.

Working process:-

- Make sure that top cover is closed.
- Make sure that the emergency button is released; otherwise turn them in the arrow direction.
- Make sure that the dust collector is on.
- Turn main switch on.
- Turn starter to star position, after some second turn it to delta position.
- To lift or to lower the thicknessing table operate on selector, the table moves at high speed to the direction indicated by the selector.
- Reach the right position with micrometric shiftments of the thicknessing table by pressing button, which will carry shiftments at low speed only upwards.

Q.26. How will you react to the situation if wood is jammed in the cutting area of thickness planer.

If the wood is jammed in cutting area

- Immediately press the emergency stop button and wait for the cutter block to stop completely.
- Release the emergency stop button.
- Lower the thicknessing table.
- Press the emergency stop button.
- Remove the wood.
- Restart the machine.

Q.27. Write down the applications of band saw and mention the advice that you should follow while working on the band saw.

Application of band saw

Cross cuts - cuts made perpendicular to the long axis of the work piece.

Rip cuts- cuts made parallel to the long axis of the work piece.

Radius or curved cuts –wood projects that require curved and irregular shapes for cutting can be done by band saw.

Advice for use:-

- Do not tighten the blade too much.
- Never work with blades that are not sharp.
- Unloose the blade after use.
- Always keep the wheel clean
- Check frequently the condition of cleaning brush fitted to bottom wheel

Q.28. Write down the steps to start the band saw machine.

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

05X10 = 50 Marks

05 essay type questions, each question carries 10 mark.

Q.29. what are the types of saw blade used in panel saw and what are their application.

Universal saw blade:- it is used for cutting panels and solid wood.

Solid wood saw blade:- it is used for cutting solid wood cross cut. It gives a precise cut as there are 96 teeth in the saw blade.

Along the grains saw blade:- it is used to cut solid wood in along the grain direction. This type of saw blade has 28 no. of teeth.

Panel saw blade :- it is used to give fine cuts to panels. This type of saw blade has 96 no. of teeth.

Razor cut :- it is used for cutting hard materials. It has 72 no. of teeths.

Non-ferrous metal :- it is used for aluminum cuts.

Types of saw blade used in panel saw

Tooth shape	Type of saw blade	application
Wz (z=48)	Universal	Solidwood & panel
Wz (z=96)	Solid wood	Solidwood crosscut
Wz (z=28)	Along the grains	For along the grain
Fz/Tr(z=96)	Panel	For panels fine cut
Ut Tr / Tr (z=72)	Razor cut	For hard materials
Fz / TR-5	Non ferrous metal	For aluminium cuts

Q.30. Write down all the safety precautions and working steps of surface planer.

- Never wear gloves while working on this machine it might be injurious if the gloves get stuck in the cutter.
- 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.

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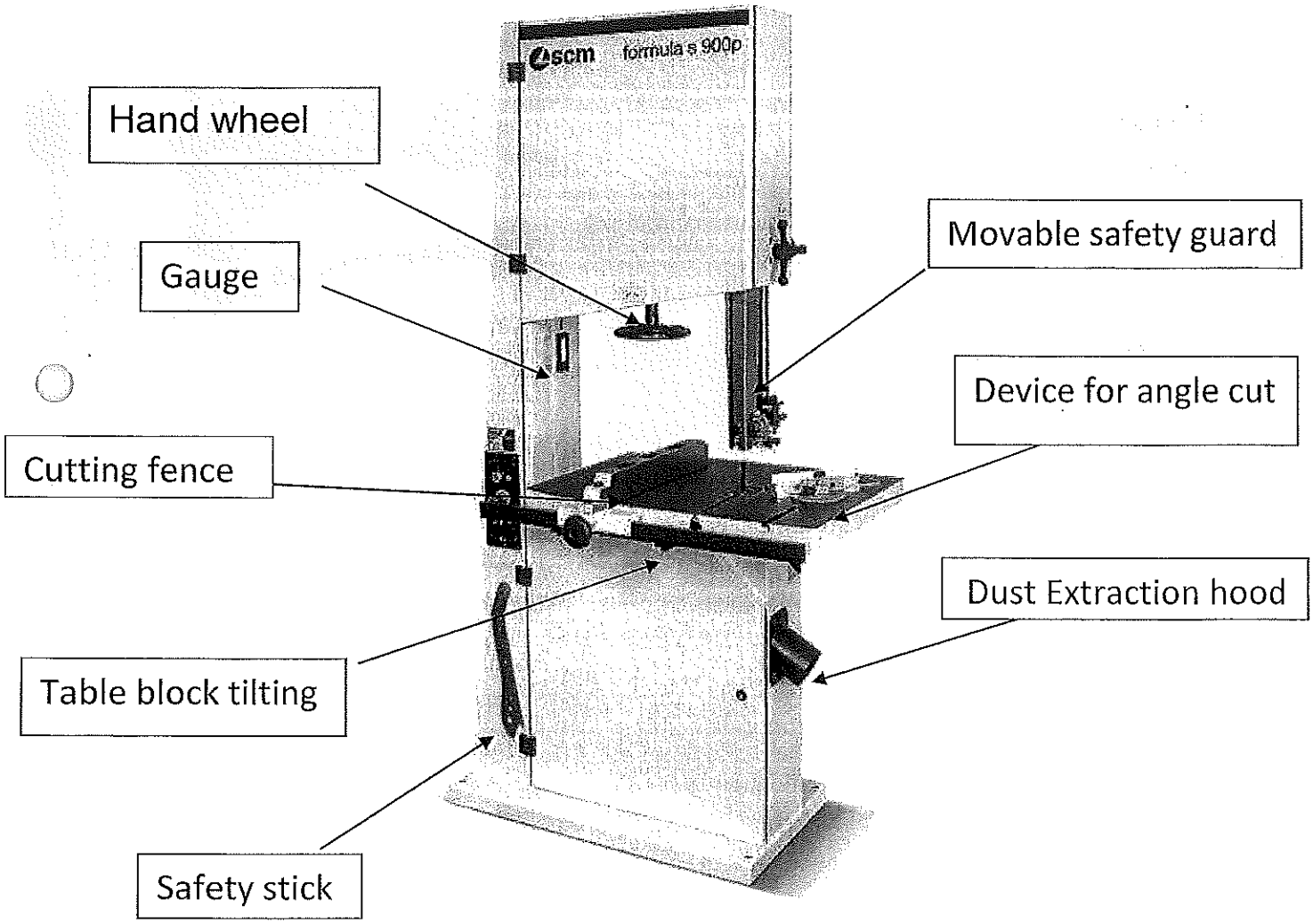
Working process of surface planer

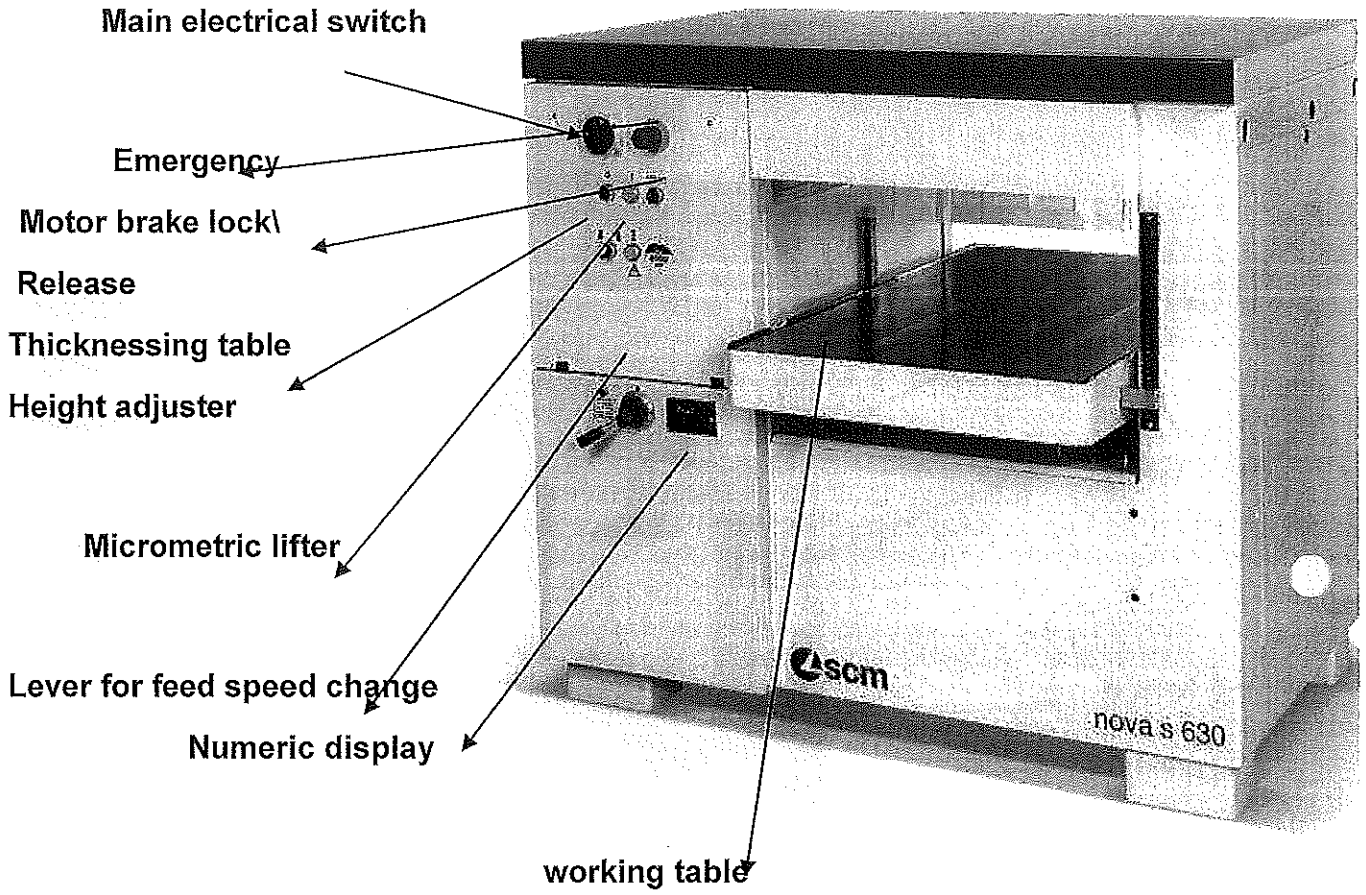
- Dust collector should be on
- Make sure that the fence is set to 90^0
- Turn on the main electrical switch
- Press the start button
- Set the height of the cutter block according to work piece.
- Take the depth of cut.
- Start the trimming or grinding.

Q.31. Draw a labelled diagram of band saw and mention its technical data.



- worktable dimensions: 580 x 810 mm
- Max. cutting height: 360 mm
- Max. cutting width: 580 mm
- worktable tilting: 0° - 45° (20°)
- cast iron saw wheels diameter: 600 mm
- saw blade length: 4480 - 4580 mm
- saw blade dimensions: 10 x 0,6 - 35 x 0,6 mm
- three phase motor: 2,2 (2,7) kW

Q.32. Briefly describe the thickness planer machine.



Thickness planer:- it is a wood working machine that is used to reduce work piece to a consistent thickness throughout their length and flat on both surface.

Note:-

- It is necessary to have one side perfectly flat before thickness planning.
- The flat surface will be reference to the table
- The cutter blade will remove the material from the opposite side.

Technical data:-

- 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
- Feed speed – 5-8-12-18
- Suction hood diameter – 150 mm

Dimension of work piece to be thicknessed

- Max. Thickness – 300 mm
- Max. Width – 630 mm
- Min. thickness – 3, 5 mm
- Min. length – 260 mm
- Min. width – 10 mm

Q.33. What are the general safety rules that you should follow in the workshop.

General information about safety rules

Before attempting any work or using any power tool or machines there are general safety rules which everyone should follow in order to keep himself and others safe in workshop.

- Always listen carefully to the trainer and follow instructions.
- Do not run in the workshop, you could 'bump' into another and cause an accident.
- Know where the emergency stop buttons are positioned in the machines. If you see an accident, happening you can use the emergency stop button to stop the machine.
- Always wear safety shoes in the workshop.
- When learning how to use a machine, listen very carefully to all the instructions given by the trainer. Ask questions, especially if you do not fully understand.
- Do not use a machine if you have not been shown how to operate it safely by the trainer.

- Always carry ear plug to the training centre.

- Always use ear plug when working on a machine.
- Keep hands away from moving/rotating machinery.
- Use hand tools carefully, keeping both hands behind the cutting edge.
- Report any damage to machines/equipment as this could cause an accident.

Registration No.: .....

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

School of Carpenter Skills

B. Voc. Program, Summer (2017-18)

I Semester, End-Sem. Examination

Course Code: SCS1104 **Time: 3 Hours**

Course Name: Assembly **Max. Marks: 100**

Instruction:

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

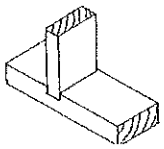
Section – A

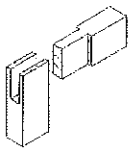
20X01 = 20 Marks.

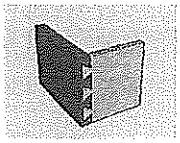
Q1. Which one of the following is the shape of lamello biscuit?

(a) Circular (b) Elliptical (c) oval (d) Rectangle

Q2. Which one of the following is a "Housing joint"?

(a) 

(b) 



(c) (d) None of these

Q3. Which one of the following sign is helpful to identify the work pieces in the assembling process?

(a) zig zag lines (b) triangle (c) snack line (d) cross

Q4. Which one of the following lamello biscuits can be used for a corner joint with 8 mm MDF boards?

(a) 20 (b) 10 (c) 00 (d) 40

Q5. Which one of the following machine is usually used for lamello 20 biscuit?

(a) Classic X (b) zeta P2 (c) Circular (d) Domino

Q6. Which one of the following joints is not used for Carpenter Assembly?

(a)Half lap joint (b) Dovetail joint (C) Diamond joint (d) Bridle joint

Q7. Which one of the following is a permanent assembly?

(a) knockdown fitting (b) fastening screw (C) clamex (d) Dowel

Q8. Which one of the following woods is used to make lamello biscuit?

(a)T Steam Beach wood (b) teak wood (c) Mango wood (d) Pine wood

Q9. Which one of the following woods is used to make Domino biscuits?

(a)Teak wood (b) Steam Beach wood (c) Mango wood (d) Pine wood

Q10. Which one of the following we used to make Clamex biscuit?

(a)Plastic (b) Steam Beach wood (c) Mango woo (d) Pine wood

Q11. Which one of the following is not a permanent assembly?

(a) Lamello joints (b) Domino (c) Clamex (d) Dowel

Q12. Which one of the following is the shape of dowel?

(a) oval (b) Elliptical (c) cylindric (d) Rectangle

Q13. Which one of the following angle do you cut on the panel saw to make a 90^0 joint on miter?

(a) 30^0 (b) 45^0 (c) 60^0 (d) 90^0

Q 14. Which one of the following wooden dowel is used for marking 8mm hole?

(a) 7.5mm (b) 8mm (c) 8.5mm (d) 7mm

Q15.Which one of the following tools do you need to mount a lock on a cabinet shutter.

(a)Chisel (b) screw driver (c) hammer (d)file

Q16. Which one of the following is the standardized distance(mm) between the holes for the shelf supports in the cabinet sides?

(a) 45 (b) 37 (c)32 (d)24

Q17. Which one of the following is used for joints?

(a) nailing (b) varnish (c) sanding (d) none of these

Q18. Which one of the following is a corner joint where the fingers are locked together by diagonal cuts?

(a) dovetail (b) finger joint (c) miter joint (d) none of these

Q19. Which one of the following are reason of the dry gluing process?

(a) To check errors in the assembly (b) To check all availability.

(b)none of these (d) both of these

Q20. Where should the triangle sign be placed on the work pieces?

(a) corner of work piece (b) top of work piece

(b) bottom of work piece (d) middle of work piece

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Section – B

06X05 = 30 Marks

Q21. Explain the gluing process of a Domino joint in carpenter assembly step by step.

Q22. Discuss three different types of wooden joints with neat sketch.

Q23.What is dry gluing process? Why do we use this process before gluing?

Q24. Explain the importance of triangle sign in assembly with an example.

Q25.Make a step by step instruction, how to make a 90^0 angle cut without any try square on a board.

Q26.Explain five different marking signs and symbols used in carpenter assembly with figure.

Q27.How do you attach wheels on a trolley? explain step by step.

Q28.Discuss the steps for oiling process after assembling the raw MDF cabinet.

Section – C

05X10 = 50 Marks

Q29. You are working on a waste trolley as we did in training. Make a step by step instruction how to assemble it with glue and clamps.

Q30. Describe the procedure of assembly in making a table top as performed in training.

Q31. Explain the type of joints given below with figures.

(A) But joint

(B) Lap joint

(C) Tenon and mortise joint

(D) Dowel joint

(E) Cross lap joint

Q32. Describe five different types of joinery methods in carpenter assembly with figure.

Q33.Write down all the work steps how to make a locker as performed in training session.

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School of carpenter school

I Semester, 2nd In-Sem. Examination

B. Voc. Program, Summer Semester (2018-19)

Course Code: SCS1104 **Time: 3 hours**

Course Name: Assembly **Max. Marks:100**

Instruction:

- Answer all question from section A, each question carries one marks.
- Answer any six question from section B, each question carries five marks.
- Answer all question from section C, each question carries ten marks.

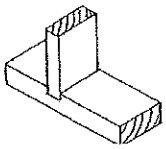
Section – A

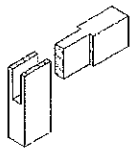
20X01 = 20 Marks.

Q1. Which one of the following is the shape of lamello biscuit?

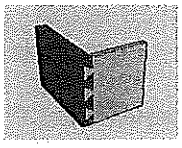
(a) Circular (b) Elliptical (c) oval (d) Rectangle (c)

Q2. Which one of the following is a "Housing joint"?

(a) 

(b) 

(a)



(c) (d) None of these

Q3. 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 (b)

Q4. Which one of the following lamello biscuits can be used for a corner joint with 8 mm MDF boards?

(a) 20 (b) 10 (c) 0(Zero) (d) 40 (c)

Q5. Which one of the following machines is usually used for lamello 20 biscuits?

(a) Classic X (b) zeta P2 (c) Circular s (d)Domino (a)

Q6. Which one of the following joints is not used for Carpenter Assembly?

(a)Half lap joint (b) Dovetail joint (C) Diamond joint (d)Bridle join (c)

9Q7. Which one of the following is a permanent assembly?

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(a) knockdown fitting (b) fastening screw (C)clamex (d) Dowel (d)

Q8. Which one of the following wood is used to make lamello biscuits?

(a)T Steam Beach wood (b) teak wood (c)Mango wood (d) Pine wood (a)

Q9. Which one of the following wood is used to make Domino biscuits?

(a)Teak wood (b) Steam Beach wood (c)Mango wood (d) Pine wood (b)

Q10. Which one of the following we used to make Clamex biscuit?

(a)Plastic (b) Steam Beach wood (c) Mango woo (d)Pine wood (b)

Q11. Which one of the following is not a permanent assembly?

(a) Lamello joints (b) Domino (c) Clamex (d)Dowel (c)

Q12. Which one of the following is the shape of dowel?

(a) oval (b) Elliptical (c) cylindric (d)Rectangle (c)

Q13. Which one of the following angles do you cut on the panel saw to make a 90^0 joint on mitre.

(a) 30^0 (b) 45^0 (c) 60^0 (d) 90^0 (b)

Q 14. Which one of the following wooden dowel is used for a marking 8mm hole?

(a) 7.5mm (b) 8mm (c) 8.5mm (d) 7mm (b)

Q15.Which one of the following tools do you need to mount a lock on a cabinet shutter.

(a)Chisel (b) screw driver (c) hammer (d)file (b)

Q16. Which one of the following is the standardized distance between the holes for the shelf supports in the cabinet sides?

(a) 45mm (b) 37mm (c)32mm (d)24mm

(c)

Q17. Which one of the following is use for joints?

(a) nailing (b) varnish (c) sanding (d) none of these

(a)

Q18. Which one of the following is a corner joint where the fingers are locked together by diagonal cuts?

(a) dovetail (b) finger joint (c) miter joint (d) none of these (a)

Q19. Which one of the following are reasons of the dry gluing process?

(a) To check errors in the assembly (b) To check all availability. (d) (b)none of these (d) both of these

Q20. Where should the triangle sign be placed on the work pieces?

(a) corner of work piece (b) top of work piece

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(b) bottom of work piece (d) middle of work piece (b)

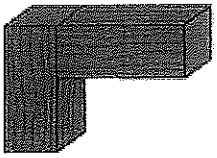
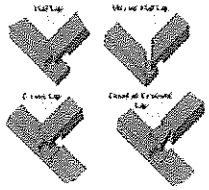
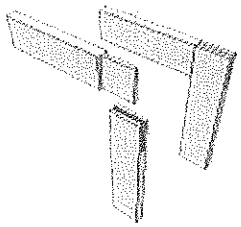
Section – B

06X05 = 30 Marks

Q21. Explain the gluing process of a Domino joint in carpenter assembly step by step.

Ans. Gluing process by using domino in assembly, after making groove in all pieces first we will glue all the domino 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 30 to 40 minutes. During the clamping we will use some waste pieces between final piece and clamp which will prevent final piece to damages and also remove all the extra glue from inside of the box with wet cotton.

Q22. Write down and make a sketch of three different wooden joints.

Butt joint		The end of a piece of wood is butted against another piece of wood.
Lap joint		The end of a piece of wood is laid over and connected to another piece of wood. This is the next simplest and weakest joint.
Bridle joint		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.

Q23.What is 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.

1. To check errors in the assembly.
2. To check the positioning of the pieces.
3. To check all availability.

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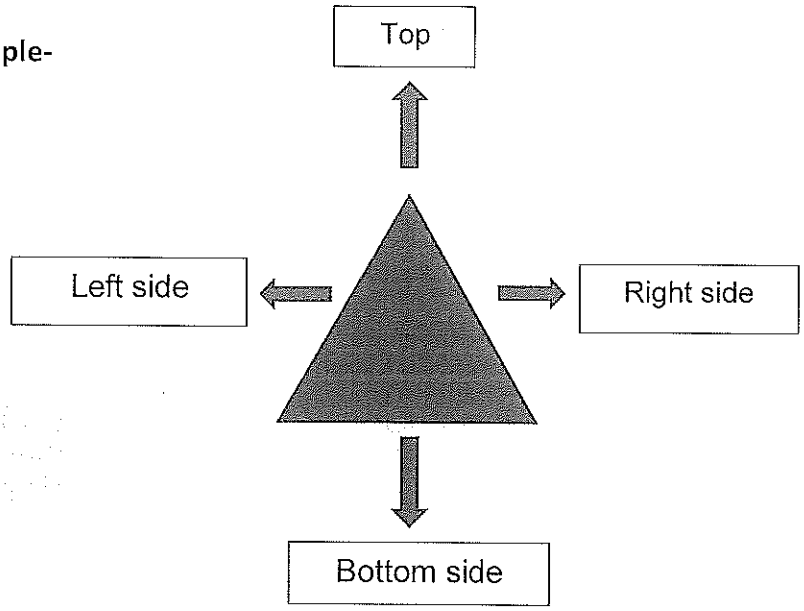
Q24. Explain the importance of triangle sign with an example.

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

1. We always make tringle according to front view 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 triangle sign always. (in case of less no. of component)
4. Triangle sign should always come on the corners of work piece.

Example-



Q25.Make a step by step instruction, how to make a 90^0 angle cut without any try square on a board.

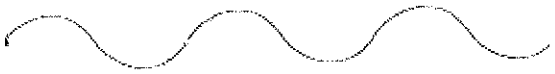
Ans.

1. First I will take MDF board.
2. Mark 10mm bottom on the MDF.
3. Then we will cut this 10mm by circular saw.
4. Then we will apply 3,4 and 5 ratios.
5. This ratio will be transfer on MDF board, create a right angle.
6. Then we will check ratio.
7. Then we will start the cutting of the MDF board.
8. After cutting the MDF board is 90^0.

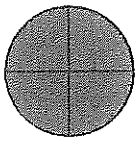
Q26.Explain five different marking signs and symbols used in carpenter assembly

Ans.

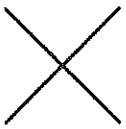
1. Wave line –
   wave line show the material will be remove till the wave line.



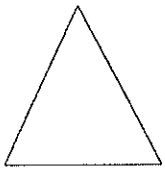
2. Circle line –
   Circle line show the material will be cut till the center point of the circle.



3. Cross line –
   Cross line show this material will be remove throughout.



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



Q27.How do you attach wheels on a trolley? explain step by step.

Ans.

1. First we will select the trolley wheel according to requirement.
2. According to wheel board thickness select the screw.
3. According to drawing we will do measurement transfer on trolley.
4. First we will do drill, drill diameter should be less to screw diameter.
5. Then we will do screw with wheel trolley.
6. Then we will do same for all wheels.

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Q28. Discuss the steps for oiling process after assembling the raw MDF cabinet.

1. Drawing reading
2. According to drawing we will select material.
3. Mark the triangle signs on cabinet.
4. Then we will do glue and clamp the material.
5. Leave it with clamp for 45 minutes.
6. Then we will do sending by hand sending machine.
7. Then we will make chamfer by edge router machine.
8. After that we will do oiling by teak oil.
9. After 20 minutes we will do polish by dry cloth.

Ans. Gluing process by using lamello in assembly, after making groove in all pieces first we will glue all the lamello 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 30 to 40 minutes. During the clamping we will use some waste pieces between final piece and clamp which will prevent final piece to damages and also remove all the extra glue from inside of the box with wet cotton.

Section – C

05X10 = 50 Marks

Q29. You are working on a waste trolley as we did in training. Make a step by step instruction how to assemble it with glue and clamps.

Ans.

1. According to drawing we will collect all work pieces.
2. We will make joint according to drawing with the help of hand machine.
3. We will collect the clamp according to trolley dimension.
4. After we will collect the supporting part, it will be between the clamp and the waste trolley.
5. Then we will do dry gluing.
6. After dry gluing we will do gluing.
7. Then it will be clamp.
8. After clamping we will leave it 3 to 4 hours for dry.
9. Then we will remove all glues with wet cloth.
10. With the help of try square we will check the 90^0.

Q30. Describe the procedure of assembly in making a table top as performed in training.

Ans.

10. Drawing reading
11. According to drawing we will select material.

12. After that we will cut the material by panel saw according to given dimension.
13. Then we make 90 degrees by surface planer machine.
14. Then we will make sizing in thickness and width side by thicknesser machine.
15. Set the material according to given dimension in width.
16. Mark the triangle sign.
17. Then we will do lamello by lamello machine.
18. Then we will do glue and clamp the material.
19. Leave it with clamp for 45 minutes.
20. After that we will make fixed sizing by panel saw.
21. Then we will do sending by sending costa machine.
22. Then we will do sending by hand sending machine.
23. Then we will make chamfer by edge router machine.
24. After that we will do oiling by teak oil.
25. After 20 minutes we will do polish by dry cloth.

Q31. Explain the type of joints given below with figures.

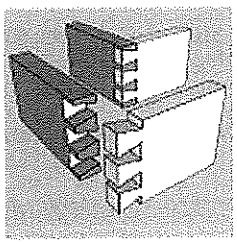
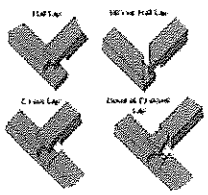
(A) Dovetail joint

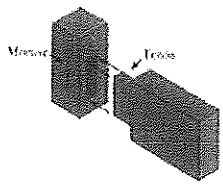
(B) Lap joint

(C) Tenon and mortise joint

(D) Dowel joint

(E) Cross lap joint

Dovetail joint		A form of box joint where the fingers are locked together by diagonal cuts. More secure than a finger joint.[1]
Lap joint		The end of a piece of wood is laid over and connected to another piece of wood. This is the next simplest and weakest joint.

Mortise and Tenon		A stub (the Tenon) will fit tightly into a hole cut for it (the mortise).
Dowel joint		The end of a piece of wood is butted against another piece of wood. This is reinforced with dowel pins. This joint is quick to make with production line machinery and so is a very common joint in factory-made furniture.
Cross Lap		A joint in which the two members are joined by removing material from each at the point of intersection so that they overlap.
Groove joint		Like the dado joint, except that the slot is cut with the grain.

Q32. Describe five different types of joinery methods in carpenter assembly with figure.

Ans1. 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.

2. Nailing: In the nailing process we can nail parts together by using different nails.

3. biscuit joinery: In biscuit joinery system we can joint two parts together by using lamella biscuit joints.

4. Domino joinery system: In the domino joinery system we can joint to parts together by using domino joints.

5.Wooden Dowel: In the wooden dowel joinery system we can joint to parts together by using wooden dowel and glue.

Q33.Write down all the work steps how to make a locker as performed in training session.

Ans.

1. First we will read the drawing reading.
2. According to drawing we will select material.
3. Then we will make 90^0 on MDF board.

4. We will do measurement transfer on the mdf according to require dimension.
5. Then I will cut the material by circular saw.
6. After that we will do dry gluing and cheek the error and requirement.
7. We will do gluing and clamping and leave it for 2 to 3 hours.
8. Then we will remove the glue by wet cloth.
9. After 3 hours we will do unclamp locker.
10. Then we will do sending by hand sending machine
11. We will fit the hinge in the door, then we installed the door inside the locker.
12. Then we will make a hole for lock
13. Then we installed the lock inside the hole.
14. Then we will do oiling on the locker.
15. After 20 minutes we will do polish by dry cloth.

Registration No.: .....

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

School of Carpenter Skills

1st Semester, End Term Examination

B. Voc. Program, Summer Semester (2018-19)

Course Code: SCS1105 **Time: 3 Hour**

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

Instructions:

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

Section – A

Q.1.Which one of the following is a range of density of soft wood?

(a) 200-400 (b) 400-600

(c) 800-900 (d) None of these

Q.2. Which one of the following raw materials is used for OSB?

(a)Fiber (b) wooden straw

(c) Particles (d) wooden strips

Q.3. Which one of the following is not a type of wood panel?

(a) Particle board (b) Ply board

(c) MDF (d) Teak board

Q.4. Which one of the following is not a factor of wood panel storage?

(a) moisture (b) temperature

(c) light (d) seasoned air

Q.5. Which one of the following terms is related to wood panel storage?

(a) planning (b) stacking

(c) finishing (d) handling

Q.6. Which one of the following is not a factor for adhesive process?

(a) wetting (b) cold temperature condition

(c) surface tension (d) adhesion zone

Q.7. Which one of the following is a natural defect in wood?

(a) Case hardening (b) Twisted fibers

(c) Dry rot (d)Wet rot

Q.8. Which one of the following formed when branch has come out of the tree?

(a) Wet rot (b) Heart rot

(c) Brown rot (d) White rot

Q.9. Which one of the following is most inner part in wood?

(a) Annual ring (b) Bark

(c) Pith (d) Heart wood

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

Q.10. Which one of the following is a defect due to seasoning in wood?

(a) Brown rot (b) Twist

(c) Heart rot (d) Knot

Q.11.Which one of the following adhesive is used for interior furniture work ?

(a) type 1 (b) type II

(c) type III (d) None of these

Q.12. Which one of the following is a not a consideration factor before gluing?

(a) surface symmetry (b) porous

(c) roughness (d) thickness of board

Q.13.Which one of the following is an example of fiber board?

(a) Particle board (b) Oriented Strand Board

(c) MDF (d) Ply board

Q.14. Which one of the following is a Slenderness ratio in wood panel manufacturing?

(a) Length/Area (b) Area/Thickness

(c) Length/Thickness (d)Thickness/Length

Q.15. Which one of the following is not a standard size MDF panel?

(a) 4*8 feet (b) 6*8 feet

(c) 5*6 feet (d) 4*7 feet

Q.16. Which one of the following process is done with the help of Hook arm sleeve?

(a) Handling (b) storage

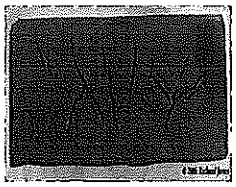
(c) cutting (d) stacking

Q.17. Which one of the following is not a type of fiber base panel?

(a) MDF (b) LDF

(c) PDF (d) HDF

Q.18. Which one of the following is a wood defect as shown in image?



(a) Twist (b) cup

(c) Bow (d) Honey combing

Q.19. Which one of the following is not a part of wood structure?

(a) leaves (b) Bark

(c) Pith (d) Heart wood

Q.20. Which one of the following is a factor for seasoning process?

(a) shape (b) size

(c) moisture (d) color

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Section – B

Q.21. Discuss four types of natural defects in natural wood.

Q.22. Differentiate between hard wood and soft wood based on their wood properties.

Q. 23. Differentiate between Ply board and MDF board.

Q.24. Explain the importance of Wood based panels. Discuss any two types of wood panels.

Q.25. What do you understand by Oriented Strand Board? Explain raw material used for OSB board?

Q 26 Discuss various considerations involved in adhesive selection.

Q 27 What is Bonding? Discuss adhesion and cohesion in adhesive process with a neat sketch.

Q 28 What do you mean by settling time for adhesive? Discuss various types of adhesives used in wood working industries.

Section – C

Q.29. Discuss various seasoning defects in natural wood with a suitable diagram.

Q.30. Explain the various factors used in selection of qualitative timber .

Q.31. Discuss the structure of wood with a suitable diagram. Explain the formation of annual ring in natural wood.

Q.32. What do you understand by seasoning in natural wood? Discuss its various types used in wood working industries.

Q 33 What do you mean by adhesive? Write down advantages of adhesives over mechanical fasteners.

Registration No.: .....

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

School of Carpenter Skills

1st Semester, End Term Examination

B. Voc. Program, Summer Semester (2018-19)

Course Code: SCS1105 **Time: 3 Hour**

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

Instructions:

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

Section – A

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(a) 200-400 (b) 400-600

(c) 800-900 (d) None of these **(a)**

Q.2. Which one of the following raw materials is used for OSB?

(a)Fiber (b) wooden straw

(c) Particles (d) wooden strips b

Q.3. Which one of the following is not a type of wood panel?

(a) Particle board (b) Ply board

(c) MDF (d) Teak board d

Q.4. Which one of the following is not a factor of wood panel storage?

(a) moisture (b) temperature

(c) light (d) seasoned air c

Q.5. Which one of the following terms is related to wood panel storage?

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(c) finishing (d) handling b

Q.6. Which one of the following is not a factor for adhesive process?

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(c) surface tension (d) adhesion zone

Q.7. Which one of the following is a natural defect in wood?

(a) Case hardening (b) Twisted fibers

(c) Dry rot (d)Wet rot **(b)**

Q.8. Which one of the following formed when branch has come out of the tree?

(a) Wet rot (b) Heart rot

(c) Brown rot (d) White rot **(b)**

Q.9. Which one of the following is most inner part in wood?

(a) Annual ring (b) Bark

(c) Pith (d) Heart wood **(a)**

Q.10. Which one of the following is a defect due to seasoning in wood?

(a) Brown rot (b) Twist

(c) Heart rot (d) Knot **(b)**

Q.11.Which one of the following adhesive is used for interior furniture work ?

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(c) type III (d) None of these c

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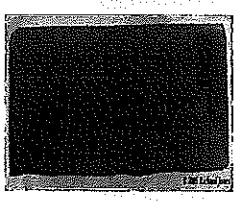

(a) Twist (b) cup

(c) Bow (d) Honey combing d

Q.19. Which one of the following is not a part of wood structure?

(a) leaves (b) Bark

(c) Pith (d) Heart wood a

Q.20. Which one of the following is a factor for seasoning process?

(a) shape (b) size

(c) moisture (d) color c

Section – B

Q.21. Discuss four types of natural defects in natural wood.

Ans. 1. Knots: -these are the bases of branches or limbs which are broken or cut off from the tree. The portion from which the branch is removed receives nourishment from the stem for a pretty long time and it ultimately results in formation of dark hard rings which are known as knots.

2. Shakes: -these are longitudinal separations in wood between the annual rings. These are cracks which partly or completely separate fibers of wood. The separations make the wood undesirable when Appearance is important.

3. Chemical stain: -the wood is sometimes discolored by the chemical action caused with it by some external agency. This is known as chemical stain.

4. Rind galls: -the rind means bark and gall indicates abnormal growth. Hence peculiar curved swelling found on the body of tree are known as rind gall. They develop at points from where branches are improperly cut off or removed. They are rarely found in a tree

03X03 = 09 Marks

Q.22. Differentiate between hard wood and soft wood based on their wood properties.

Ans.

Soft wood	Hard wood
It is resinous wood having a fragrant smell and regular texture.	It is non-resinous wood containing fairly good amount of acid.
Straight fiber and good texture.	Fibers are quite close and compact.
Light in color and weight.	Dark in color and heavy in weight
annual rings are distinct	Annual rings are not distinct
Good tensile strength and week shear strength	Good tensile as well as shear strength
Get split quickly	Does not split quickly
Weaker and less durable	stronger and more durable
Catch fire soon cannot withstand high temperature.	It has an added advantage in its refractoriness.
It is easy to be worked	It is difficult to be worked.

03X02 = 06 Marks

Q. 23. Differentiate between Ply board and MDF board.

Plywood is an engineered wood product made up of sheets of wood veneer. The wood veneer boards are pressed and bonded together to create one solid piece. This manufacturing process is called cross-graining and it reduces shrinkage and expansion while improving panel strength consistency. Different grades of plywood are used for different purposes. Plywood grades are affected by many variables including the type of

wood ply, thickness, adhesive, and manufacturing/compaction process. Lower grades are perfect for subflooring in buildings and homes. High grades can be used for cabinets and shelving. There are many types of plywood to choose from. Make sure to choose the correct plywood type for the furniture or fixture you are building. Plywood comes not only in different thicknesses, but also in different grades, so you can choose the right one for your project. Lower grades are used in construction of houses for subfloors and such. Obviously these types of plywood don't need to look pretty since they'll be covered up.

The higher grades of plywood (stain grade, cabinet grade, etc.) are much prettier and smoother. They have consistent wood grain showing, and generally lack knot holes or other major imperfections. And cabinet grade plywood is always sanded very smoothly on the surface.

You can also find plywoods in various wood species, like oak, or maple, or pretty much anything else, so that you can get exact look you want for your project.

MDF stands for medium-density fiberboard, which is an engineered wood composite made up of wood fibers. Because the MDF is composed of small wood fibers, there is no visible wood grain, rings, or knots. The making of the composite uses the fibers, glue, and heat to create a tight bonding board. Both softwood and hardwood are used to manufacture MDF. Generally denser than plywood, this composition creates a stronger material for building. We use a veneer sealant to prevent water damage. Two types of fiberboard are moisture resistant (which is typically blue) and fire retardant.

Q.24. Explain the importance of Wood based panels? Discuss any two types of wood panels.

Engineered wood products are used in a variety of ways, often in applications similar to solid wood products. Engineered wood products may be preferred over solid wood in some applications due to certain comparative advantages:

- Because engineered wood is man-made, it can be designed to meet application-specific performance requirements. Required shapes and dimension do not drive source tree requirements (length or width of the tree)
- Engineered wood products are versatile and available in a wide variety of thicknesses, sizes, grades, and exposure durability classifications, making the products ideal for use in unlimited construction, industrial and home project application.
- Engineered wood products are designed and manufactured to maximize the natural strength and stiffness characteristics of wood. The products are very stable and some offer greater structural strength than typical wood building materials.
- Glued laminated timber has greater strength and stiffness than comparable dimensional lumber and, pound for pound, is stronger than steel.
- Some engineered wood products offer more design options without sacrificing structural requirements

- Engineered wood panels are easy to work with using ordinary tools and basic skills. They can be cut, drilled, routed, jointed, glued, and fastened. Plywood can be bent to form curved surfaces without loss of strength. And large panel size speeds construction by reducing the number of pieces to be handled and installed.
- Engineered wood products make more efficient use of wood. They can be made from small pieces of wood, wood that has defects or underutilized species.
- Wooden trusses are competitive in many roof and floor applications, and their high strength-to-weight ratios permit long spans offering flexibility in floor layouts.
- Engineered wood is felt to offer structural advantages for home construction.
- Sustainable design advocates recommend using engineered wood, which can be produced from relatively small trees, rather than large pieces of solid dimensional lumber, which requires cutting a large tree.

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Plywood is an engineered wood product made up of sheets of wood veneer. The wood veneer boards are pressed and bonded together to create one solid piece. This manufacturing process is called cross-graining and it reduces shrinkage and expansion while improving panel strength consistency. Different grades of plywood are used for different purposes. Plywood grades are affected by many variables including the type of wood ply, thickness, adhesive, and manufacturing/compaction process

Q.25. What do you understand by Oriented Strand Board, explain raw material used for OSB board?

- Oriented strand board (OSB), also known as flakeboard, sterling board is a type of engineered wood similar to particle board, formed by adding adhesives and then compressing layers of wood strands (flakes) in specific orientations. It was invented by Armin Elmendorf in California in 1963.[1] OSB may have a rough and variegated surface with the individual strips of around 2.5 cm × 15 cm (1.0 by 5.9 inches), lying unevenly across each other and comes in a variety of types and thicknesses.

Oriented strand board is manufactured in wide mats from cross-oriented layers of thin, rectangular wooden strips compressed and bonded together with wax and synthetic resin adhesives (95% wood, 5% wax and resin. The adhesive resins types used include : Urea-formaldehyde (OSB type 1, non-structural, non-waterproof); isocyanate based glue (or PMDI poly-Methylene diphenyl diisocyanate based) in inner regions with Melamine-Urea-

formaldehyde or Phenol formaldehyde resin glues at surface (OSB type 2, structural, water resistant on face); Phenol formaldehyde resin throughout (OSB types 3 and 4, structural, for use in damp and outside environments).

The layers are created by shredding the wood into strips, which are sifted and then oriented on a belt or wire cauls. The mat is made in a forming line. Wood strips on the external layers are aligned to the panel's strength axis, while internal layers are perpendicular. The number of layers placed is determined partly by the thickness of the panel but is limited by the equipment installed at the manufacturing site. Individual layers can also vary in thickness to give different finished panel thicknesses (typically, a 15 mm (0.6 in) layer will produce a 15 cm (5.91 in) panel thickness. The mat is placed in a thermal press to compress the flakes and bond them by heat activation and curing of the resin that has been coated on the flakes. Individual panels are then cut from the mats into finished sizes.

Types of OSB

- OSB/0 – No added formaldehyde
- OSB/1 – General purpose boards and boards for interior fitments (including furniture) for use in dry conditions
- OSB/2 – Load-bearing boards for use in dry conditions
- OSB/3 – Load-bearing boards for use in humid conditions
- OSB/4 – Heavy-duty load-bearing boards for use in humid conditions

Q 26 Discuss various considerations involved in adhesive selection.

Adhesive selection involves the following considerations:

Substrates: What are you trying to bond?

Are the surfaces the same or dissimilar?

porous or smooth?

Are you covering a large area?

Do you have heat or solvent sensitive surfaces?

Application restrictions: How do you intend to apply the adhesive- examples: spray, roll, heat gun, cartridge, squeeze bottle?

Use Requirements: How does the bonded piece get used? How much strength is required? For example, bonding wood requires much more strength than decorative paper crafts do. What kind of environments might it see? Will it experience temperature extremes or water/steam

Q 27 What is Bonding? Discuss adhesion and cohesion in adhesive process with neat sketch.

Bonding is the joining of two substrates using an adhesive, an adhesive is defined as a non-metallic binder that acts via adhesion and cohesion. An adhesive as "a substance capable

of holding materials together by surface attachment". Adhesion is the adhering of similar or different types of materials to each other. Cohesion is the inner strength of a material,
The adhesive interactions between an adhesive and a substrate not only concern the actual area of contact (adhesion zone) of the adhesive and substrate but also concern the state of the adhesive in the vicinity of the surface of the substrate (transition zone).

Q 28 What do you mean by settling time for adhesive, Discuss various types of adhesives used in wood working industries.

wood glue is water based and it is made of the same vinyl acetate polymers. It is designed to work with wood and is immediately tacky for better hold in the uncured state. It is also generally more rigid, hence it is easier to sand. Some wood glue can also be white and dry clear. The time taken for settling with in adhesive zone for adhesive layer s called settling time . for wood glues settling time is approx less than 1 hr, but it could take as long as 24 hours to reach full strength.

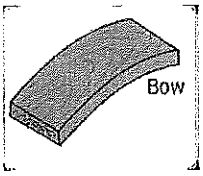
Three types of wood adhesives are available:

Type-I exhibits some waterproof properties.

Type-II will perform better in exterior conditions. These adhesives generally have a longer open time and can bond at colder temperatures. Both types I and II can be used for exterior applications, such as outdoor furniture and trim.

Type-III is not water resistant and is designed for interior use only. It is good for interior woodwork and trim projects.

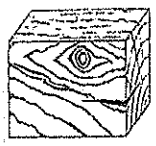
Q.29. Discuss various seasoning defects in natural wood with suitable diagram.



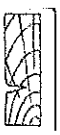
Ans. 1. Bow: -this defect is indicated by curvature formed in direction of length of timber.

2. Cup: -this defect is indicated by curvature formed in transverse direction of timber

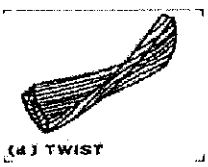
3. check: -a crack which separates fibers of wood.it does not extend from one end to the check.



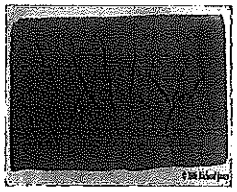
4. Split: -when the extends from one end to other, it is known as a split.



5. Twist: - when a piece of timber has spirally distorted along its length,it is known as a twist.



6. Honey-combing: - due to stress developed during drying, various radial and circular cracks develop in the interior portion of timber



Q.30. Explain the various factors used in selection of qualitative timber .

Ans. 1. It Should have Straight Fiber

2. Wood Obtained from near the pith is always better than the rest of the tree.

3. It should be free from knots.

4. It should not possess natural defects.

5. On sawing it should give a sweet smell.

6. It should have regular annual rings.

7. It should not clot the saw teeth during sawing.

8. It should be Strong and heavy.

9. It should not split when nails are driven in to it.

10. It should bear high resistance shock and stresses.

11. It should have dark colour, give clear sound, easily workable, high resistance to fire and free from decay.

12. On planning it should give silky texture and bright appearance.

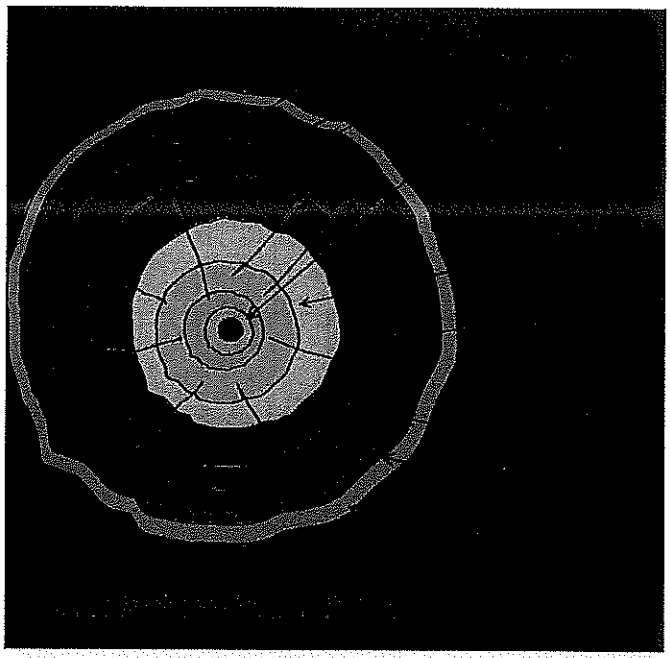
13. It should not wrap or twist after seasoning.

Q.31. Discuss the structure of wood with suitable diagram. Explain the formation of annual ring in natural wood?

Ans. Structure diagram of wood: -

Structure of Timber Tree

1. Pith
2. Heart Wood
3. Sap Wood
4. Cambium Layer
5. Inner Bark or Bast
6. Outer Bark or Cortex
7. Annual Rings
8. Medullary Rays



Annual Ring: -

Each year, the tree forms new cells, arranged in concentric circles called annual rings or annual growth rings. These annual rings show the amount of wood produced during one growing season. Then, towards the end of the summer, growth slows down. The cells manufactured at this time of year are small, with thick walls. They form the summerwood (latewood) which appears as a darker ring on the tree cross section.One year of growth is therefore represented by a ring consisting of a light part and a dark part. The darker wood is not formed in winter, as some people believe, because the cambium is completely inactive in the winter. The following year, a new two-part ring is added. The older rings are closest to the center of the tree. The tree grows in diameter because it manufactures new cells around its circumference, not because the old cells get larger.

Q.32. What do you understand by seasoning in natural wood, discuss its various types used in wood working industries?

Ans. Seasoning of timber is the process of drying or removing the moisture or Sap presents in a freshly felled timber, under more or less controlled conditions. Freshly felled timber contains a large humidity of moisture roughly from 100 to 200%, based upon dry weight of wood. If the timber is used without seasoning it is liable to shrink, wrap and crack.

Methods of Seasoning

1. Natural Seasoning

(a) Air Drying/ seasoning (b) Water Seasoning

2. Artificial Seasoning

(a) Kiln Seasoning (b) Chemical Seasoning (c) Electrical Seasoning

Natural Seasoning

(a) Air Seasoning: -

In this method of seasoning the sawn timber is stacked in a dry place about 30 cm above floor level with longitudinal and crosspieces arranged one upon another, leaving a space of a few Centimeters for free circulation of air. Wood fit for carpenter's work after 2 years and for painter's work after 4 years.

(b) Water Seasoning: -

This method of seasoning timber consists in keeping logs of wood completely immersed in a running stream of water, the longer ends of the log being kept pointing up-stream. By this process, the sap, sugar and gum etc are leached out of the wood and replaced by water. The logs are then taken out and left to dry in an open place.

2. Artificial Seasoning

(a) Kiln Seasoning: - The timber is seasoned under controlled temperature and humidity conditions with proper circulation and ventilation system. The rise in temperature should be such that the timber retains the original strength and elastic properties. The required humidity level is maintained to avoid wrapping and cracking. The drying of timber at uniform rate is well maintained by circulating hot air by fans and a certain amount of steam is added

in order to retain correct humidity. The ventilation is provided to avoid overheating and excessive humidity. The timber inside the chamber, on trolley is kept under controlled conditions for about fortnight or depending upon the initial water content and required moisture level. The quality of wood is inferior as compared to the one seasoned by natural seasoned methods.

b) Chemical Seasoning: - It is also known as salt seasoning. In the method, the timber is immersed in a solution of soluble salt. It is then taken out and seasoned in ordinary way. The interior surface of timber dries in advance of exterior one and chances of formation of external cracks are reduced.

(C) Electrical Seasoning: - This method of seasoning works on the principle that heat is produced when poor conductor is placed in the field of high frequency. The wooden planks are made to pass through an induction coil producing high frequency. Due to an induction effect moisture contents in the wood is dried quickly. This method of drying is employed in plywood manufacturing process. This method is not
popular because of prohibitive cost, lack of control moisture content, sudden drying damage wooden fibers.

Q 33 What do you mean by adhesive, Write down advantages of adhesives over mechanical fasteners.

An adhesive is defined as a non-metallic binder that acts via adhesion and cohesion. An adhesive as "a substance capable of holding materials together by surface attachment".
Eliminate harm to paint/laminated surfaces.
Facilitate tight bonds between close fitting surfaces.
Eliminate corrosion associated with metal fasteners.
Eliminate distortion or discoloration of parts caused by thermal joining methods.
Avoid need for secondary refinishing to obtain aesthetically pleasing appearance.
Eliminate pull-through and dimpling of visible panels.
Reduce surface finishing on drywall.
Afford greater design flexibility, and compared to bolted joints and riveted joints, there is less need for machined holes, and additional machined components.
Fatigue—There are few, if any, stress concentrations associated with adhesive joints and thus adhesives increase fatigue resistance for more durable products versus mechanical fasteners.
Product quality
Reliability
Durability
Life of product

Registration No.: .....

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

School of Carpenter Skills

B. Voc. Program, Summer (2017-18)

I Semester, End-Sem. Examination

Course Code: SCS1106 **Time: 3 Hours**

Course Name: Hand Drawing **Max. Marks: 100**

Instruction:

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

Section – A

Q.1. Which one of the following indicates a Centre line?

(a) _____ (b) — — — — — —

(c) — — — — — — (d) — — — — — —

Q.2 Which one of the following projection angle methods is not used in carpentry drawing?

(a) First angle (b) Fourth angle

(c) third angle (d) None of these

Q.3.How many units can be calculated in plain scale?

(a) 1 (b) 2

(c) 3 (d) 4

Q 4. Which one of the following methods is not used for temporary fastening?

(A) Adhesive (B) welding

(C) Rivets (D) nut & bolt

Q.5. Which one of the following angle of projections follows sequence of Observer - plan of projection – object?

(a) First angle of projection (b) Second angle of projection

(C) third angle of projection (d) Fourth angle of projection

Q 6. How many units can be calculated by diagonal scale?

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

Q 7. Which one of the following is the dashline?

(A) _____ (B) — — — — — —

(C) — — — — — — (C) — — — — — —

Q 8. Which one of the following projection is used in projection method?

(A) Third angle (B) Second angle (C) Fourth angle (D) None of these

Q 9. Which one of the following section method is used for cutting ¼ part?

(A) object section (B) half section (C) full section (D) off cut

Q 10. Original dimension of the object is 250 mm and it is in drawing of 500. What will be the scale ratio?

(A) 1:1 (B) 1:2 (C) 2:1 (D) None of these

Q 11. Which one of the following angle of projection follows sequence of Observer – object-plan of projection?

(A) First angle of projection (B) Second angle of projection

(C) third angle of projection (D) Fourth angle of projection

Q 12. Which one of the following is a continuous line?

(A) (B)

(C) (C)

Q 13. Which one of the following section method is not used in drawing?

(A) object section (B) half section (C) full section (D) off cut

Q 14. Which one of the following section method is used for cutting at center line?

(A) object section (B) half section (C) full section (D) off cut

Q 15. Which one of the following method is not used for permanent fastening?

(A) Adhesive (B) Nail (C) screw (D) nut & bolt

Q.16. Original dimension of the object is 600 mm and it is in drawing of 300. What will be the scale ratio?

(a) 1:1 (b) 1:2

(c) 2:1 (d) None of these

Q 17. Which one of the following dimensions is used for title box?

(A) 150*60mm (B) 120*60mm (C) 150*40mm (D) 100*60mm

Q 18. Which one of the following dimensions is used for boundary line?

(A) 30*15*15*15mm (B) 30*15*15*10mm (C) 30*15*10*15mm (D) 30*10*15*15mm

Q 19. Which one of the following letter has different dimension in drawing?

(A) A (B) C (C) D (D) M

Q 20. Which one of the following pencil is not used in drawing?

(A) H1 (B) H5 (C) H4 (D) H3

BHARTIYA SKILL DEVELOPMENT UNIVERSITY

Section – B

Q.21. Differentiate between Third angle projection and First angle projection

Q.22. Discuss various types of projection views used in drawing with examples.

Q 23. Discuss various tools used in hand drawing.

Q 24. Discuss various types of Thick lines and Thin lines used in Hand drawing .

Q 25. Differentiate between half section view and full section view.

Q 26. Draw Front, Top, Side & Axonometry view for "Half lap joint".

Q 27. What do you understand by fastening? Discuss permanent and temporary fastening?

Q 28. What is projection of points? Draw points (2,4), (3,6), (-5,5) on coordinate axis.

Section – C

Q.29. What are the importance of lines in hand drawing? Discuss various types of lines used in hand drawing.

Q. 30. Explain various types of scale used in hand drawing with suitable example and a neat diagram.

Q.31. Explain the importance of hand drawing in carpentry. How is it related to quality of product?

Q 32. Describe types of section views used in hand drawing with a suitable diagram.

Q 33. Make a hand drawing with all three views for Corner Bridle joint with a suitable title block.

A.K.

School of Carpenter Skills

1st Semester, End Term Examination

B. Voc. Program, Summer Semester (2018-19)

Course Code: SCS1106 | **Time: 3 Hour**

Course Name: Hand Drawing | **Max. Marks: 100**

Instructions:

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

Section – A

05X01 = 05 Marks

Q.1. Which one of the following indicates a Centre line?

(a)

(b)

(c)

(d)

(C)

Q.2 Which one of the following projection angle methods is not used in carpentry drawing?

(a) First angle

(b) Fourth angle

(c) third angle

(d) None of these

(B)

Q.3.How many units can be calculated in plain scale?

(a) 1

(b) 2

(c) 3

(d) 4

(B)

Q 4. Which one of the following method is not used for temporary fastening?

(A) Adhesive (B) welding (C) Rivets (D) nut & bolt **(D)**

Q.5. Which one of the following angle of projections follows sequence of Observer - plan of projection – object?

(a) First angle of projection

(b) Second angle of projection

(C) third angle of projection

(d) Fourth angle of projection

(C)

Q 6. How many units can be calculated by diagonal scale?

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

Q 7. Which one of the following is the dash line?

(A) (B)

(C) (C) **(B)**

Q 8. Which one of the following projection is used in projection method?

(A) Third angle (B) Second angle (C) Fourth angle (D) None of these **(A)**

Q 9. Which one of the following section method is used for cutting ¼ part?

(A) object section (B) half section (C) full section (D) off cut **(B)**

Q 10. Original dimension of the object is 250 mm and it is in drawing of 500. What will be the scale ratio?

(A) 1:1 (B) 1:2 (C) 2:1 (D) None of these **(C)**

Q 11. Which one of the following angle of projection follows sequence of Observer – object-plan of projection?

(A) First angle of projection (B) Second angle of projection

(C) third angle of projection (D) Fourth angle of projection **(A)**

Q 12. Which one of the following is the continuous line?

(A) (B)

(C) (C) **(A)**

Q 13. Which one of the following section method is not used in drawing?

(A) object section (B) half section (C) full section (D) off cut **(A)**

Q 14. Which one of the following section method is used for cutting at center line?

(A) object section (B) half section (C) full section (D) off cut **(c)**

Q 15. Which one of the following method is not used for permanent fastening?

(A) Adhesive (B) Nail (C) screw (D) nut & bolt **(A)**

Q.16. Original dimension of the object is 600 mm and it is in drawing of 300. What will be the scale ratio?

(a) 1:1 (b) 1:2

(c) 2:1 (d) None of these **(B)**

Q 17. Which one of the following dimensions is used for title box?

(A) 150*60mm (B) 120*60mm (C) 150*40mm (D) 100*60mm (A)

Q 18. Which one of the following dimensions is used for boundary line?

(A) 30*15*15*15mm (B) 30*15*15*10mm (C) 30*15*10*15mm (D) 30*10*15*15mm (A)

Q 19. Which one of the following letter has different dimension in drawing?

(A) A (B) C (C) D (D) M **(D)**

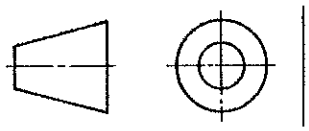
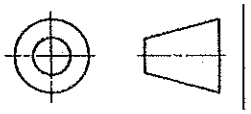
Q 20. Which one of the following pencil is not used in drawing?

(A) H1 (B) H5 (C) H4 (D) H3 **(B)**

Section – B

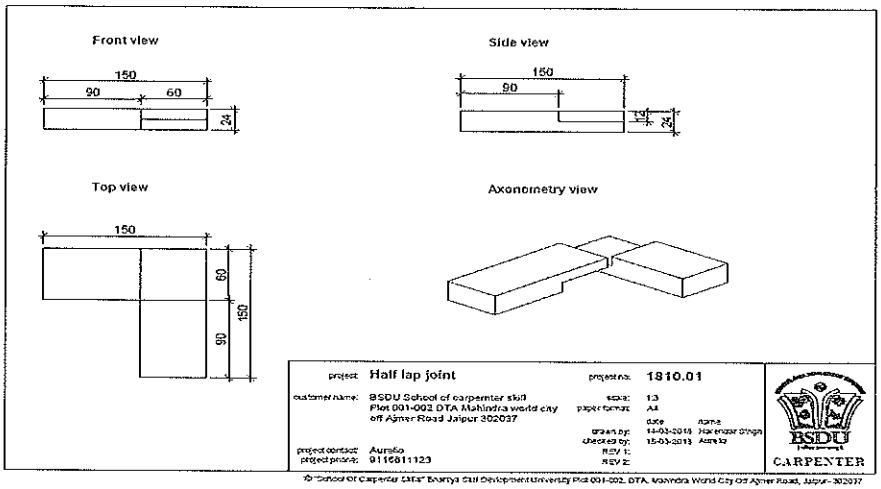
Q.21. Differentiate between Third angle projection and First angle projection

Ans.

FIRST ANGLE PROJECTION	**THIRD ANGLE PROJECTION**
Observer – object – plan of projection	Observer – plan of projection – object
View stays in first quadrant .	View stays in third quadrant.
This is used in India.	This is used in European country.
	
Dimensions are drawn up to the axis line.	Dimension are drawn below to the axis line.

Q.22. Discuss various types of projection views used in drawing with examples.

Ans. Top view, Front view, side view.



Q 23. Discuss various tools used in hand drawing.

Ans. 1. Measuring tools:

2. Marking tools:

Q 24. Discuss various types of Thick lines and Thin lines used in Hand drawing .

Ans. 1. Continuous Thick line: This line is used for visible out line and visible Edges

2. Continuous thin or straight curve line: This line is used for Imaginary lines of intersection, dimension line, projection line, leader line, hatching line, short centre line.

3. Continuous thin freehand: This line is used for limits of partial or interrupted views and section.

4. Dashed thick line: This line is used for Hidden outline and hidden edges.

5. Dashed thin line: This line is used for hidden out line and hidden edges.

6. Chain thin: This line is used for centre lines and lines of symmetry.

Q 25. Differentiate between half section view and full section view.

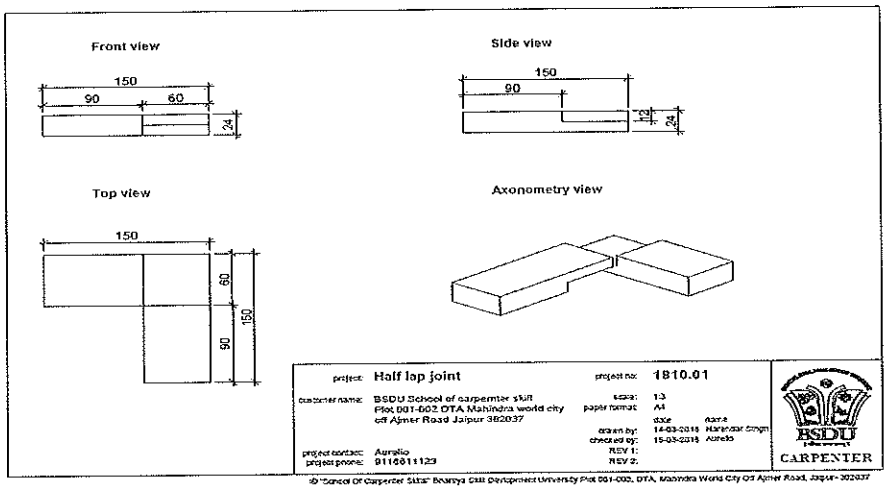
Ans. 1. In full section view cut section is done across centre line and in half section view cut section is done across quarter part.

2. In full section cutting plane passes through the entire object and in half section cut through only half of the object.

3. half section view is effective only on symmetrical object and full section view is effective on non-symmetrical object.

4. in half section internal and external construction is shown in a same drawing and in full section internal and external construction are shown in different drawing.

Q 26. Draw Front, Top, Side & Axonometry view for "Half lap joint".



Drawing no. 1.1

Q 27. What do you understand by fastening, discuss permanent and temporary fastening?

Ans.

Q 28. What is projection of points? Draw points (2,4), (3,6), (-5,5) on coordinate axis.

Ans. –

Q.29. What are the importance of lines in hand drawing, discuss various types of lines used in hand drawing.

Ans.

1. Continuous Thick line: This line is used for visible out line and visible Edges

2. Continuous thin or straight curve line: This line is used for Imaginary lines of intersection, dimension line, projection line, leader line, hatching line, short centre line.

3. Continuous thin freehand: This line is used for limits of partial or interrupted views and section.

4. Dashed thick line: This line is used for Hidden outline and hidden edges.

5. Dashed thin line: This line is used for hidden out line and hidden edges.

6. Chain thin: This line is used for centre lines and lines of symmetry

Q. 30. Explain various types of scale used in hand drawing with suitable example and neat sketch.

Ans.

1. Plain scale: A scale which is used to measure maximum two units and minimum one.

2. Diagonal scale: A scale which is used to measure maximum 3 units and minimum two units.

3. Scale of chord: It is used to measured angle on large field area were protector is not possible to measure angle.

Q.31. Explain the importance of hand drawing in carpentry. How is it related to quality of product?

Ans.

Importance of hand drawing.

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

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

Q 32. Describe types of section views used in hand drawing with a suitable diagram.

Ans. –

Full Section

If the imaginary cutting plane passes through the entire object, splitting the drawn object in two with the interior of the object revealed, this is called a "full section." A full section is the most widely-used sectional view.

Half View

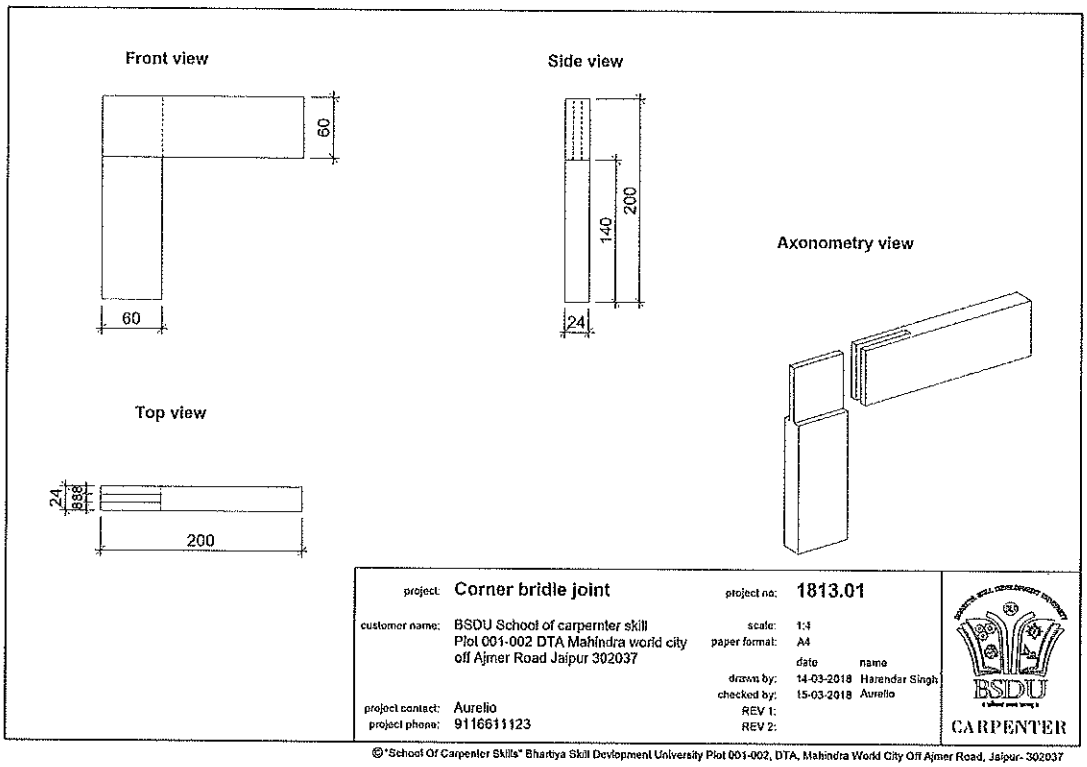
In this view, the cutting plane is assumed to bend at a right angle and cuts through only half of the represented object, not the full length. When the quarter of the object that was cut is removed, the remainder is called a "half section." A half section view is effective only on symmetrical objects, and its main purpose is to show an object's internal and external construction in the same drawing.

Offset View

When specific features of an object that need highlighting are not located on the straight line of the cutting plane, an irregular-shaped cutting plane is imagined cutting the object, revealing the desired components. This is called an "offset view," and is effective on complex objects. The bends in the imaginary cutting pane are always 90 degrees.

Q 33. Make a hand drawing with all three views for Corner Bridle joint with a suitable title block.

Ans. -



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BHARTIYA SKILL DEVELOPMENT UNIVERSITY

School of Carpenter Skills

B. Voc. Program, Summer Semester (2018-19)

III Semester, End-Sem. Examination

Course Code: SCS1301 **Time: 3 Hours**

Course Name: Advanced Handy Machine **Max. Marks: 100**

Instruction:

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

2.Answer 6 questions out of 8 questions from section B, each question carries five marks.

3.Answer all questions from section C, each question carries ten marks.

Section – A

20X01 = 20 Marks

Q.1.Which one of the following is set of the depth can be taken while using 5 mm drill in Domino machine?

(A) (28,25,12) mm (B) (12,15,20) mm

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

Q.2.Which one of the following is the diameter of saw blade of MITRE SAW KAPEX KS 88?

(A) 120 mm (B) 240 mm

(C) 250 mm (D) 260 mm

Q.3.Which one of the following is the diameter of saw blade of MITRE SAW SYM 70?

(A) 260 mm (B) 216 mm

(C) 250 mm (C) 215 mm

Q.4.Which one of the following is the diameter of drill used for making 10*20 mm domino dowels?

(A) 4 mm (B) 10 mm

(C) 8 mm (D) 6 mm

Q.5.Which one of the following is the diameter of cutter used in ZETA P2?

(A) 60 mm (B) 70 mm

(C) 100 mm (D) None of these.

Q.6.Which one of the following biscuits is not made by Lamello classic X?

(A) C20 (B) H9

(C) Clamex p-14 (D) All of these.

Q.7.Which one of the following is the maximum cutting depth taken in ZETA P2?

(A) 10 (B) 15

(C) 18 (D) None of these.

Q.8. Which one of the following accessory is used for splinter free cut?

(A) Reliable guidance (B) Splinter guide

(C) Parallel side fence (D) Both (A) & (B)

Q.9.Which one of the following is the accessory used for reducing the domino dowel center?

(A) Cross stop
(B) Additional stop
(C) Handrail fence
(D) Trim stop

Q.10.Which one of the following is the height of work piece cut by MITRE SYM 70?

(A) 45
(C) 70
(C) 60
(D) All of these.

Q.11.Which one of the following is the maximum width of work piece cut by MITRE SYM 70?

(A) 80
(B) 65
(C) 100
(D) 70

Q.12. Which one of the following is the depth taken while using 4 mm cutter in Domino machine?

(A) 28 mm
(B) 25 mm
(C) 12 mm
(D) 20 mm

Q.13. Which one of the following is the accessory used by Jig saw PS/PSB 300?

(A) Perfect circle
(B) Straight cuts
(C) Guide rails
(D) All of these

Q.14.Which one of the following is the angular range of circular hand saw TS 55 REBQ?

(A) 1 to 45 degree
(B) -1 to -45 degree
(C) -1 to -47 degree
(D) None of these

Q.15.Which one of the following is the accessory used as a rear and front stop position on guide rail?

(A) False joint stop
(B) Kickback stop
(C) Parallel side fence
(D) splinter guard

Q.16.Which one of the following machine is used for making biscuit joint and grooves?

(A) Jig Saw
(B) Domino
(C) Lamello Classic X
(D) Both (B) & (C)

Q.17.Which one of the following is the machine used for making dovetail joint?

(A) Circular saw
(B) MITRE saw
(C) Jig saw
(D) Router

Q.18.Which one of the following is the machine in which tool does not change for all operations?

(A) Router
(B) Jig saw
(C) Lamello classic X
(D) Circular saw

Q.19.Which one of the following is maximum biscuit size used by Lamello classic X?

(A) 12 mm
(B) 15 mm
(C) 20 mm
(D) 10 mm

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Q.20.Which one of the following machines is used for making chamfer and round profile on work piece?

(A) Router
(B) Jig saw
(C) Edge router
(D) None of these

Section – B

06X05 = 30 Marks

Q.21.What are the benefits of using the guide rail for cutting?

Q.22.Describe the three different types of holes made by the Domino machine.

Q.23.What are the five steps of changing tool of the Domino machine?

Q.24.Name and describe five safety gears used while working on Handy machines.

Q.25.Describe the six steps for changing the saw blade of Circular hand saw TS 55 REBQ.

Q.26.Why is it necessary to use Dust collector while working with Handy machine?

Q.27.Describe any five system accessories of Circular Hand Saw TS 55 REBQ and their benefits.

Q.28.Describe the pendulum router principle of drill of Domino machine with the help of a diagram.

Section – C

05X10 = 50 Marks

Q.29. Describe the benefits of making joint with Lamello Classic X and Domino machine and Compare them.

Q.30.Draw a labelled diagram of a Hand Router and mention its parts.

Q.31.Describe the work steps for making a corner joint between the bottom and side piece of a cabinet by the domino machine.

Q.32.Describe the work steps of making a 5 mm back wall groove with the Hand router.

Q.33.Describe the work steps of cutting a panel by circular Hand Saw with the help of guide rail.