



## BHARTIYA SKILL DEVELOPMENT UNIVERSITY.

School of Carpenters Skills  
Session:2019-20 (Summer Semester)  
B. Voc. Program, 1<sup>st</sup> semester,  
1<sup>st</sup> In-Sem Examination

Course Code: SCS1101

Time: 1 Hour

Course Name: Hand skill & measurement transfer

Max. Marks: 20

**Instruction:**

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

### Section – A

05X01 = 05 Marks.

Q.1. Which one of the following is a planing tool?

- (a) Try square (b) screw driver  
(c) Japanese pull saw (d) none of them.

Q.2. Which one of the following is a marking tool?

- (a) Manual hand planer (b) Perforated chisel  
(c) Try square (d) None of them

Q.3. Which one of the following saw is used to make dovetail joint?

- (a) Indian saw (b) Japanese saw  
(c) Coping saw (d) Back saw

Q.4. Which one of the following is not the application of try square.

- (a) Used to make straight line. (b) Used to check surface flatness  
(c) Used to make curved lines. (d) all of the above

Q.5. Which one of the following is the usual angle of miter cut?

- (a) 45° (b) 60°  
(c) 30° (d) 25°

### Section – B

03X02 = 06 Marks

Q.6. What is measurement transfer? List the names of five measuring tools.

Q7. Write down the names of three cutting tools and define them.

Q.8. What is a try square? Mention its uses.



Registration No.: .....

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### Section – C

03X03 = 09 Marks

Q.9. Draw five marking Symbols and write down their scopes.

Q.10 Differentiate between groove, rebate and profile with the help of Suitable diagram.

Q.11. What is a carpenter triangle? why do we use it?



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School of Carpenter Skills  
Session 2019-20(Summer Semester)  
B. Voc. Program, 3<sup>rd</sup> Semester  
1<sup>st</sup> In-Sem. Examination

Course Code: SCS1101

Time: 1 Hour

Course Name: Hand skill & measurement transfer

Max. Marks: 20

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- Answer all questions from section A, each question carries one mark.
- Answer all questions from section B, each question carries two marks.
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### Section – A

05X01 = 05 Marks.

Q.1. Which one of the following is a planing tool?

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Q.5. Which one of the following is the angle of miter cut?

- (a) 45° (b) 60°  
(c) 30° (d) 25° (a)

### Section – B

03X02 = 06 Marks

Q.6. What is measurement transfer. List the names of five measuring tools.

**Ans.** Measurement transfer means the transfer of the dimension and shapes from the drawing on the wood.



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The following tools are used for measuring.

- a. Steel meter
- b. Roll meter
- c. Dowel meter
- d. Vernier calipers
- e. Marking gauge

Q7. Write down the names of three cutting tools and define them.

**Ans. Crosscut Saw or Ripsaw:**

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

**Back saw:**

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

**Japanese pull saw:**

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

Q.8. What is a try Square. Mention its uses.

**Ans.** A try square is a hand tool that comes under the category of marking tools.

It is commonly used for

- a. Transferring straight lines to the work piece
- b. For checking the flatness of any surface.
- c. To Check  $90^{\circ}$  of the work piece.

**Section – C**

03X03 = 09 Marks

Q.09. Draw five marking Symbols and write about their scopes.

**Ans.**

**(i) Cross Symbol**

The scope of this symbol is

- a. Throughout cut.
- b. Continuous separation cut, cut off cut

**(ii) Wave line**



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- a. The scope of this symbol is
- b. Material that is removed throughout

### (iii) Hatching

The scope of this symbol is:

- a. Material that is partially removed, not through-out,  
e.g. hatching for notches

### (iv) Arrow

The scope of this symbol is:

- a. Limitation of machining operations, e.g. for groove, Rebate.

### (v) Cross exactly across the diagonal

The scope of this symbol is

- a. Mortice hole

Q.10 Differentiate between groove, rebate and profile with the help of diagram.

**Ans.**

#### **Groove**

The edge of groove are indicated Symbolically by lines.

The G denotes the groove.

#### **Rebate**

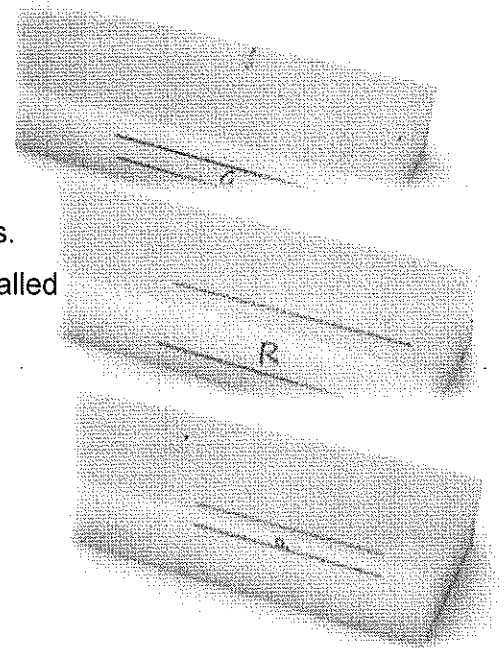
The edges of the rebate are indicated symbolically by lines.

The "R" indicates the rebate. A decorative rebate is also called a rebate, not a profile.

#### **Profile**

The edges of profile are indicated Symbolically by lines.

The p denotes the profile.



Q.11. What is a carpenter triangle and why do we use it.

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





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School of Carpenters Skills

Session 2019-20(Summer Semester)

B. Voc. Program ,1<sup>st</sup> Semester,

1<sup>st</sup> In-Sem Examination

Course Code: SCS1104

Time: 1 Hour

Course Name: Joint & Assembly

Max. Marks: 20

## Instruction:

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

## Section – A

05X01 = 05 Marks.

Q.1. Which one of the following is the example of joint without extra connector.

- (a) Biscuit joint (b) Dowel joint  
(c) lap joint (d) None of them.

Q.2. Which one of the following is the example of joint with extra connector.

- (a) Bridle joint (b) Dovetail joint  
(c) Biscuit joint (d) none of them

Q.3. Which one of the following is the example of detachable joint.

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

Q.4. Which one of the following is the direction where the top of carpenter triangle always point.

- (a) Downwards (b) Backwards  
(c) Upwards (d) Right side

Q.5. which one of the following is not the example of permanent joint.

- (a) Screw (b) Clamex  
(c) Nails (d) Dowels with glue

## Section – B

03X02 = 06 Marks

Q.06. What is a butt joint. Write down the types of butt joint.

Q 07. What is a lap joint. Write down the types of lap joint.





Registration No.: .....

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Q.08. Write down the steps to make a bridle joint.

### Section – C

03X03 = 09 Marks

Q.09. What are the points that should be considered while selecting wood for assembly.

Q.10 Write down the calculation of a dovetail joint.

Q.11. What is the importance of a carpenter triangle.





## BHARTIYA SKILL DEVELOPMENT UNIVERSITY

School of Carpenters Skills

Session :2019-20(Summer semester)

B. Voc. Program, 1st Semester

1st in-Sem. Examination

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(c) Upwards (d) Right side (c)

Q.5. which one of the following is not the example of permanent joint.

- (a) Screw (b) Clamex  
(c) Nails (d) Dowels with glue (d)

### Section – B

03X02 = 06 Marks

Q.06. What is a butt joint. Write down the types of butt joint.

**A. Butt Joint:**

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The end of a piece of wood is butted against another piece of wood. This is the simplest and weakest joint. Of those there is the

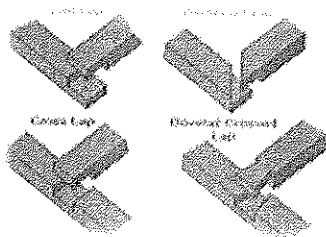
- a) T-butt,
- b) end-to-end butt,
- c) T-lap
- d) Mitre butt and
- e) edge-to-edge butt

Q 07. What is a lap joint. Write down the types of lap joint.

### A. 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.

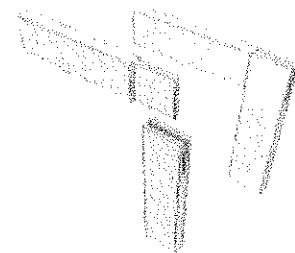


Q.08. Write down the steps to make a bridle joint.

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.

The mate has a through tenon or necked joint.

Bridle joints are commonly used to join rafter tops, also used in scarf joints and sometimes sill corner joints in timber framing.



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### Section – C

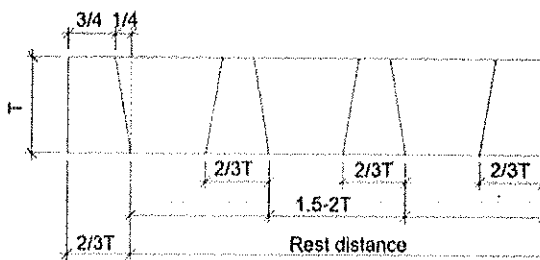
03X03 = 09 Marks

Q.09. what are the points that should be considered while selecting wood for assembly.

Before combining the work piece we must check the following.

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

Q.10 write down the calculation of a dovetail joint.



Working process -

1. Mark endtooth
2. Devide rest distance in equal parts  
( one part is  $1.5 - 2T$  )
3. Mark remainig tooth widths
4. Mark tooth - bevels

Q.11. what is the importance of a carpenter triangle.

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





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Answer key

School of Carpenter Skills  
Session: 2019-20 (Summer Semester)  
B. Voc. Program, I Semester,  
1<sup>st</sup> In-Sem. Examination

Course Code: GEN1104

Time: 1 Hour

Course Name: Elementary Mathematics

Max. Marks: 20

### Instructions:

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

### Section – A

Q 1. Which one of the following is the volume of cylinder, were "r" is radius and "h" is height of the cylinder?

- (A)  $V = 2\pi r^2 h$       (B)  $V = \pi R^2 h$       (C)  $V = \pi r^2 h^2$       (D)  $V = \pi r^2 h$       D

Q 2. How many inches are there in 1.5 meter?

- (A) 60.80 inch      (B) 58.9 inch      (C) 59.05 inch      (D) 61 inch      B

Q 3. Which one of the following is the Conversion Scientific notation conversion of 0.00001?

- (A)  $10^5$       (B)  $10^{-5}$       (C)  $10^6$       (D)  $10^{-6}$       B

Q 4. Which one of the following is 7% of 50?

- (A) 3.5      (B) 7.5      (C) 3      (D) 7      A

Q 5. Which one of the following is the value of  $20/20^5$ ?

- (A) 0.01      (B) 0.001      (C) 0.0001      (D) None of these      D

### Section – B

Q.6 Calculate the volume of cylinder in  $(\text{mm})^3$  having diameter 10 cm and height 35 cm.

$$\begin{aligned} V &= \pi r^2 h \\ &= \frac{22}{7} \times (50)^2 \times 350 \\ &= 2750000 \text{ mm}^3 \end{aligned}$$

$$\begin{aligned} \text{Dia} &= 10 \text{ cm} \\ r &= \frac{10}{2} = 5 \text{ cm} = 50 \text{ mm} \\ h &= 35 \text{ cm} = 350 \text{ mm} \end{aligned}$$

Q.7. Calculate the volume of cube in  $(\text{mm})^3$  having length of side 0.0025 m.

$$\begin{aligned} \text{Volume of cube} &= (\text{side})^3 \\ &= (0.0025)^3 \text{ m} \\ &= (2.5)^3 \text{ mm} \\ &= 15.625 \text{ mm}^3 \end{aligned} \quad \left[ 0.0025 \text{ m} = 2.5 \text{ mm} \right]$$





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Q.8. Find out the value of  $[(100)^2 + (10)^2 + (1)^2]$  cm in mm.

$$\begin{aligned}
&= (100 \times 100) + 100 + 1 \\
&= 10,000 + 100 + 1 \\
&= 10101 \text{ cm} \\
&= \text{10101 mm}
\end{aligned}$$

Section - C

Q.9. Find out the value of  $[(100)^2 + 4(10)^2 + (100)^2]$  cm /  $[3(10)^2 + 2(10)^2 + (10)^1]$  cm in meter.

$$\begin{aligned}
&= \frac{[10,000 + 400 + 10,000]}{[300 + 200 + 10]} \\
&= \frac{20,400}{510} \\
&= 59.60 \text{ cm} = 0.596 \text{ meter}
\end{aligned}$$

Q.10. Ram purchased a table in 4600 Rs and sold it with 20% profit. find out the selling price, if Ram wants to earn double of its profit by keeping selling price same what should be the purchasing price.

(i) P.P = 4600 Profit = 20%  
S.P = P.P + Profit  
 $4600 + 4600 \times \frac{20}{100}$   
 $= 4600 + 920 = 5520 \text{ Rs.}$

(ii) P.P + Profit = S.P  
P.P + 1840 = 5520  

P.P = 3680 Rs

Q.11. Carpenter buy an Almira in 5000 Rs and sold it with 15% loss. find out the selling price, if Carpenter wants to earn 10% profit by keeping selling price same, what should be the purchasing price for Almira.

(i) P.P. = 5000 Rs.  
Loss = 15%  
P.P - Loss = S.P  
 $5000 - 5000 \times \frac{15}{100} = \text{S.P.}$   
 $5000 - 750 = \text{S.P.}$   

S.P = 4250 Rs

Page 2 of 2

(ii)

$$\begin{aligned}
x + x \frac{10}{100} &= 4250 \\
110x &= 4250 \times 100, \quad \boxed{x = 3863.63 \text{ Rs.}}
\end{aligned}$$

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**School of Carpenter Skills**  
**Session: 2019-20 (Summer Semester)**  
**B. Voc. Program, I Semester,**  
**1<sup>st</sup> In-Sem. Examination**

**Course Code: SCS1105**

**Time: 1 Hour**

**Course Name: Carpenter Materials**

**Max. Marks: 20**

**Instructions:**

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

**Section – A**

- Q.1. Which one of the following is natural defect in wood?
- (a) Case hardening (b) Twisted fibers  
(c) Dry rot (d) Wet rot
- Q.2. Which one of the following is most inner part in wood?
- (a) Annual ring (b) Bark  
(c) Pith (d) Heart wood
- Q.3. Which one of the following is defect due to seasoning in wood?
- (a) Brown rot (b) Twist  
(c) Heart rot (d) Knot
- Q.4. Which one of the followings is a wood defect as shown in image?
- (a) Twist (b) cup  
(c) Bow (d) Honey combing
- Q.5. Which one of the followings is not a part of wood structure?
- (a) leaves (b) Bark  
(c) Pith (d) Heart wood



**Section – B**

- Q.6. Discuss four types of natural defects in natural wood.
- Q.7. Differentiate between hard wood and soft wood based on their wood properties.
- Q.8. Explain the importance of seasoning in wood; discuss any two types of seasoning process.

**Section – C**

- Q.9. Discuss various seasoning defects in natural wood with suitable diagram.
- Q.10. Explain the various factors used in selection of qualitative timber.
- Q.11. Discuss the structure of wood with suitable diagram. Explain the formation of annual ring in natural wood?





**School of Carpenter Skills**  
**Session: 2019-20 (Summer Semester)**  
**B. Voc. Program, I Semester,**  
**1<sup>st</sup> In-Sem. Examination**

**Course Code: SCS1105**

**Time: 1 Hour**

**Course Name: Carpenter Materials**

**Max. Marks: 20**

**Instructions:**

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**Section – A**

Q.1. Which one of the following is natural defect in wood?

- (a) Case hardening (b) Twisted fibers (B)  
(c) Dry rot (d) Wet rot

Q.2. Which one of the following is most inner part in wood?

- (a) Annual ring (b) Bark (C)  
(c) Pith (d) Heart wood

Q.3. Which one of the following is defect due to seasoning in wood?

- (a) Brown rot (b) Twist (B)  
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Q.4. Which one of the followings is a wood defect as shown in image?



- (a) Twist (b) cup  
(c) Bow (d) Honey combing (D)

Q.5. Which one of the followings is not a part of wood structure?

- (a) leaves (b) Bark (A)  
(c) Pith (d) Heart wood

**Section – B**

Q 6. Discuss four types of natural defects in natural wood.

**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



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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

Q.7. Differentiate between hard wood and soft wood based on their wood properties.

| 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 weak 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.                                  |

Q.8. Explain the importance of seasoning in wood; discuss any two types of seasoning process.

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, warp 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: -**



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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 warping 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.

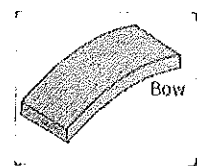
b) **Chemical Seasoning:** - It is also known as salt seasoning. In the method, the timber is immersed in a solution of soluble salt. It is then taken out and seasoned in ordinary way. The interior surface of timber dries in advance of exterior one and chances of formation of external cracks are reduced.

(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.

## Section – C

Q.9. 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.





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**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.10. 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.

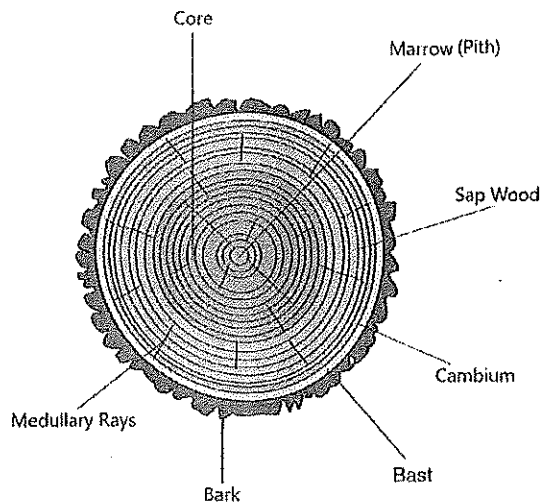
11. It should have dark colour, give clear sound, easily workable, high resistance to fire and free from decay.

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

13. It should not warp or twist after seasoning.

Q.11. 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.





# BHARTIYA SKILL DEVELOPMENT UNIVERSITY

Registration No.: .....

School of Carpenter Skills  
Session: 2019-20 (Summer Semester)  
B. Voc. Program, I Semester,  
1<sup>st</sup> In-Sem. Examination

Course Code: SCS1106

Time: 1 Hour

Course Name: Hand Drawing




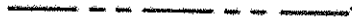
Max. Marks: 20

## Instructions:

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

## Section – A

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

- (a)  (b) 
- (c)  

Q.2. How many units can be calculated in plain scale?

- (a) 1 (b) 2  
(c) 3 (d) 4

Q.3. 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.4. Which one of the following dimensions is used for title box?

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

Q.5. 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

## Section – B

Q.6. Discuss various types of geometries used in drawing with examples.

Q.7. Discuss various tools used in hand drawing.

Q.8. Discuss various types of Thick lines and Thin lines used in Hand drawing.



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## Section – C

Q.9. What are the importance of lines in hand drawing? Discuss various types of lines used in hand drawing.

Q. 10. Explain various types of scale used in hand drawing with suitable example and neat sketch.

Q.11. Explain the importance of hand drawing in woodworking industries. How is it related to quality of product?



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Answer key

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## Instructions:

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

## Section – A

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

- (a)  (b) 
- (c)  (d)  (C)

Q.2. How many units can be calculated in plain scale?

- (a) 1 (b) 2  
(c) 3 (d) 4 (B)

Q 3. 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 4. 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 5. 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)

## Section – B

Q.6. Discuss various types of geometries used in drawing with examples.

Ans. Point, line, square, rectangle, Circle, ellipse, triangle, cylinder, cone, sphere, etc.

Q 7. Discuss various tools used in hand drawing.

Ans. 1. Measuring tools: - Roll meter, dovel meter, Vernier caliper, angle protector,

2. Marking tools: - Try square, marking guage, scribe, pencil, sliding bevel.



Q 8. 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 center 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 center lines and lines of symmetry.

### **Section – C**

Q.9. 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 center lines and lines of symmetry

Q. 10. 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.



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Q.11. Explain the importance of hand drawing in woodworking industries. 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

To check error in product

