EVEN 2025-26 **LG19311/LG19R311**

GOVERNMENT POLYTECHNIC MUMBAI
TERM END EXAMINATION

Programme : **LGFT (Sandwich Pattern)**
Course Title : **Footwear Chemistry**

2:30 Hours / 60 marks Enrolment No. | | | | | | | | | | |

Instructions:
1. Attempt all the questions.
2. Illustrate your answers with neat sketches wherever necessary.
3. Use of Mathematical Tables, Steam Table and Pocket Calculator (non-programmable) is permissible.
4. Marks on Right Hand Side indicate full marks for the question.
5. Assume suitable additional data, if necessary
6. CO=COURSE OUTCOMES, L=LEVELS

Q.1 Attempt any SIX **12 Marks**

a. Define covalent bond. **[CO-1, L-R]**
b. Define atomic radius. **[CO-2, L-R]**
c. State trend of atomic size in periodic table. **[CO-2, L-R]**
d. Define halogen derivatives. **[CO-3, L-R]**
e. State structural formula for S – pentanol. **[CO-4, L-R]**
f. State structural formula of Benzene. **[CO-5, L-R]**
g. Define plasticizer. **[CO-5, L-R]**
h. Define wax. **[CO-6, L-R]**
i. State structural formula for 1,3 butadiene. **[CO-6, L-R]**

Q.2 Attempt any THREE **12 Marks**

a. Explain ionic bond formation in NaCl. **[CO-1, L-U]**
b. Explain trend of electronegativity in periodic table. **[CO-2, L-U]**
c. Explain homologous series and its features. **[CO-3, L-U]**
d. State the uses of alcohol. **[CO-4, L-A]**

Q. 3 Attempt any THREE **12 Marks**

a. Explain covalent bonding formed between C and H in CH_4. **[CO-1, L-U]**
b. Describe the empirical and molecular formula for organic compound. **[CO-3, L-U]**
c. Describe chemical properties of benzene. **[CO-5, L-U]**
d. Differentiate between aliphatic organic compound and aromatic organic compound. **[CO-5, L-U]**

Q. 4 Attempt any FOUR **12 Marks**

a. Define hydrogen bond with suitable example. **[CO-1, L-R]**
b. State electronic configuration of C atom. **[CO-2, L-U]**
c. Explain the gradual increase in molecular size of homologous series. **[CO-3, L-U]**
d. State molecular formula for (a) 1 – Propanol (b) 2 – Propanol. **[CO-4, L-U]**
e. State the adhesives used in footwear industry. **[CO-6, L-U]**

Q. 5 Attempt any TWO **12 Marks**

a. Explain uses of plastic in footwear industry. **[CO-5, L-A]**

b. Compare properties of hot melt adhesives and pressure sensitive (Cold melt) adhesives. **[CO-6, L-A]**

c. Explain properties of natural and synthetic rubber. **[CO-6, L-A]**

****END****

EVEN 2025-26 LG19305/LG19R305

GOVERNMENT POLYTECHNIC MUMBAI
TERM END EXAMINATION

Programme : Leather Goods and Footwear Technology
Course Title : Principles of Post Tanning

2:30 Hours / 60 marks Enrolment No.

Instructions:
1. Attempt all the questions.
2. Illustrate your answers with neat sketches wherever necessary.
3. Use of Mathematical Tables, Steam Table and Pocket Calculator (non-programmable) is permissible.
4. Marks on Right Hand Side indicate full marks for the question.
5. Assume suitable additional data, if necessary
6. CO=COURSE OUTCOMES, L=LEVELS

Q.1 Attempt any SIX **12 Marks**

a. Define Neutralization. **[CO-5, L-R]**
b. List any Four types of Vegetable Tanning material. **[CO-3, L-R]**
c. Define Combination tanning. **[CO-1, L-R]**
d. Define Buffing. **[CO-6, L-R]**
e. List any Four types of Medium Leather Goods. **[CO-4, L-R]**
f. Define Rechromng. **[CO-1, L-R]**
g. Define Acid Dye. **[CO-3, L-R]**
h. List the Numbers of grit paper require in making suede leather. **[CO-6, L-R]**
i. Define Dyed crust Leather. **[CO-4, L-R]**

Q.2 Attempt any THREE **12 Marks**

a. State the object of Sammying machine. **[CO-2, L-U]**
b. Compare between suede leather and Nubuck leather. **[CO-4, L-U]**
c. Describe Semi-chrome tanning. **[CO-1, L-U]**
d. State the importance of washing after Neutralization. **[CO-5, L-A]**

Q. 3 Attempt any THREE **12 Marks**

a. State the advantages of synthetic tanning agent. **[CO-3, L-U]**
b. Explain post crusting Operation. **[CO-6, L-A]**
c. State the object of staking machine and list types of staking machines. **[CO-2, L-U]**
d. State the object of chrome Alum tanning. **[CO-5, L-U]**

Q. 4 Attempt any FOUR **12 Marks**

a. State the purpose of vacuum dryer. **[CO-2, L-A]**
b. State the properties to be required in small leather goods **[CO-4, L-A]**
c. State the physical Characteristics of Chrome Retanning. **[CO-1, L-U]**
d. State the advantage of vegetable tanning. **[CO-3, L-U]**
e. State the object of setting machine. **[CO-6, L-U]**

Q. 5 Attempt any TWO **12 Marks**

a. Explain the physical Properties required for Garment leather. **[CO-4, L-U]**

b. Explain Synthetic fat liquor and Semi-Synthetic Fat liquor. **[CO-3, L-A]**

c. Make the Flow chart of making white crust upper leather. **[CO-5, L-A]**

****End****

EVEN 2025-26

SC19111

GOVERNMENT POLYTECHNIC MUMBAI
TERM END EXAMINATION

Programme : **Leather Technology (Sandwich Pattern)**
Course Title : **Mathematics**

2:30 Hours/ 60 marks Enrolment No. | | | | | | | | | |

Instructions:
1. Attempt all the questions.
2. Illustrate your answers with neat sketches wherever necessary.
3. Use of Mathematical Tables, Steam Table and Pocket Calculator (non-programmable) is permissible.
4. Marks on Right Hand Side indicate full marks for the question.
5. Assume suitable additional data, if necessary
6. CO=COURSE OUTCOMES, L=LEVELS

Q.1 Attempt any SIX **12 Marks**

a. Solve the following equations by Jacobi's method (perform one iteration)
$10x + y + 2z = 13, 3x + 10y + z = 14, 2x + 3y + 10z = 15$ **[CO-2, L-R]**

b. Solve the following equations by Seidal method (one iteration). **[CO-2, L-R]**
$10x + y + z = 12,\ x + 10y + z = 12,\ x + y + 10z = 12$

c. Solve the following equations by Jacobi's method. (one iteration)
$10x - 2y - 2z = 6, -x - y + 10z = 8,\ -x + 10y - 2z = 7$ **[CO-2, L-R]**

d. Expand the determinant $\begin{vmatrix} 2 & 0 & 0 \\ 1 & -1 & 0 \\ 2 & 1 & 0 \end{vmatrix}$ **[CO-1, L-R]**

e. Find x *if* $\begin{vmatrix} x & 2 \\ 1 & 1 \end{vmatrix} = 0$ **[CO-1, L-R]**

f. If $A = \begin{bmatrix} 2 & 3 & 2 \\ 0 & -1 & 5 \end{bmatrix}$ *find* $2A$ **[CO-3, L-R]**

g. If $A = \begin{bmatrix} 5 & 3 \\ -1 & 1 \end{bmatrix}$ *and* $B = \begin{bmatrix} 2 & -1 \\ 3 & 2 \end{bmatrix}$ *find* $2A - 3B$ **[CO-3, L-R]**

h. Find the range of the data 3,6,10,1,15,16,21,19,18. **[CO-3, L-R]**

i. Find the co-efficient of range of the data 40,52,47,28,45,36,47 and 50. **[CO-3, L-R]**

Q.2 Attempt any THREE **12 Marks**

a. Solve the following equations by Gauss Elimination method. **[CO-2, L-U]**
$x + y + z = 6, 3x - y + 3z = 10, 5x + 5y - 4z = 3$

b. Expand the determinant $\begin{vmatrix} 3 & -5 & -1 \\ 1 & 3 & 5 \\ -5 & 1 & 3 \end{vmatrix}$ **[CO-1, L-U]**

c. If $A = \begin{bmatrix} 7 & 0 & 2 \\ 1 & 2 & 6 \\ 4 & 5 & 3 \end{bmatrix}$ *show that A is non − singular matrix.* **[CO-3, L-U]**

d. Compute Mean deviation about median for the data 5,8,10,9,7,6,5,8,5. **[CO-3, L-U]**

Q. 3 Attempt any THREE **12 Marks**

a. Solve the following equations by Gauss – Jacobi's method (perform two iterations) $5x + 2y + z = 12,\ x + 4y + 2z = 15,\ x + 2y + 5z = 20$ **[CO-2, L-U]**

b. Find x *if* $\begin{vmatrix} 0 & 7 & -2 \\ 11 & x & 10 \\ 4 & 8 & 1 \end{vmatrix} = 0$ **[CO-1, L-U]**

c. If $A = \begin{bmatrix} 2 & -3 \\ 1 & 5 \end{bmatrix}$ & $B = \begin{bmatrix} 3 & -1 & 2 \\ 1 & 0 & 1 \end{bmatrix}$ *verify* $(AB)^T = B^T A^T$ **[CO-3, L-U]**

d. Find the standard deviation for the following data : **[CO-3, L-U]**

Class-Interval	0-20	20-40	40-60	60-80	80-100
frequency	20	130	220	70	60

Q. 4 Attempt any FOUR **12 Marks**

a. Solve the following equations by Gauss-Seidal method. (Perform 2 iterations) $20x + y - 2z = 17, 3x + 20y - z = -18, 2x - 3y + 20z = 25$ **[CO-2, L-U]**

b. Find the value of $\begin{vmatrix} cos\theta & -sin\theta & 0 \\ sin\theta & cos\theta & 0 \\ 0 & 0 & 1 \end{vmatrix}$ **[CO-1, L-U]**

c. If A $= \begin{bmatrix} 1 & 2 \\ 5 & 3 \end{bmatrix}$ & $B = \begin{bmatrix} 2 & 6 \\ -3 & 4 \end{bmatrix}$ *find* $(AB)^T$ **[CO-3, L-U]**

d. If A $= \begin{bmatrix} 0 & 1 & -1 \\ 4 & -3 & 4 \\ 3 & -3 & 4 \end{bmatrix}$ *prove that* $A^2 = I$ **[CO-3, L-U]**

e. Find mean and variance of the following data **[CO-3, L-U]**

C.I.	0-10	10-20	20-30	30-40	40-50
frequency	3	5	8	3	1

Q. 5 Attempt any TWO **12 Marks**

a. The voltages in an electrical circuit are related by following equations
$V_1 + V_2 + V_3 = 9$
$V_1 - V_2 + V_3 = 3$
$V_1 + V_2 - V_3 = 1$ find V_1, V_2, V_3 **[CO-1, L-A]**

b. Solve the following equations by Jacobi's method. (perform three iterations)
$20x + y - 2z = 17$
$x + 5y + 2z = 15$
$2x + 3y + 10z = 15$ **[CO-2, L-U]**

c. The runs scored by two batsmen A and B in 5 one day matches are given below **[CO-3, L-A]**

A	48	50	39	46	37
B	50	52	60	55	53

Which batsman is more consistent? Why?

****End****

EVEN 2025-26

LT19306/LT19R306

GOVERNMENT POLYTECHNIC MUMBAI
TERM END EXAMINATION

Programme : **Leather Technology**
Course Title : **Leather Dressing.**

2:30 Hours / 60 marks Enrolment No. | | | | | | | | | | |

Instructions:
1. Attempt all the questions.
2. Illustrate your answers with neat sketches wherever necessary.
3. Use of Mathematical Tables, Steam Table and Pocket Calculator (non-programmable) is permissible.
4. Marks on Right Hand Side indicate full marks for the question.
5. Assume suitable additional data, if necessary
6. CO=COURSE OUTCOMES, L=LEVELS

Q.1 Attempt any SIX **12 Marks**

a. Define Napa leather. **[CO-4, L-R]**
b. List the chemical used for resin finish leather. **[CO-3, L-R]**
c. Define Oil pull-up leather. **[CO-1, L-R]**
d. State the list of chemical for lining leather. **[CO-4, L-R]**
e. Define Nubuck leather. **[CO-2, L-R]**
f. State the types of Resin binder. **[CO-3, L-R]**
g. Define crunch leather. **[CO-1, L-R]**
h. List the chemical used for Grain Garment leather. **[CO-4, L-R]**
i. Define Resin finish. **[CO-3, L-R]**

Q.2 Attempt any THREE **12 Marks**

a. State the properties of full chrome upper leather. **[CO-2, L-U]**
b. Describe the neutralization operation for the upper leather. **[CO-1, L-A]**
c. Explain PU film. **[CO-3, L-U]**
d. State the properties of upper leather. **[CO-1, L-U]**

Q. 3 Attempt any THREE **12 Marks**

a. Describe the Upholstery Leather. **[CO-4, L-U]**
b. State the properties of Suede leather. **[CO-2, L-U]**
c. State the properties of Garment Leather. **[CO-4, L-U]**
d. State the properties Brush of Leather. **[CO-1, L-U]**

Q. 4 Attempt any FOUR **12 Marks**

a. Describe the Dyeing & Fat Liquoring for lining leather. **[CO-4, L-A]**
b. State the properties of vegetable tan leather. **[CO-2, L-U]**
c. State the properties of suede lining leather. **[CO-4, L-U]**
d. Describe finishing operation of Nappa leather. **[CO-1, L-U]**
e. State the properties of protein finish. **[CO-3, L-U]**

Q. 5 Attempt any TWO **12 Marks**

a. Describe dyeing & Fatliquoring operation of burnish leather. **[CO-1, L-A]**

b. Describe resin finish with detail mechanical & chemical operations. **[CO-3, L-A]**

c. Explain Dyeing, fat liquoring & crusting operation for semi chrome leather. **[CO-2, L-A]**

****End****

EVEN 2025-26 LG19308 / LG19R308

GOVERNMENT POLYTECHNIC MUMBAI
TERM END EXAMINATION

Programme : Leather Goods and footwear Technology
Course Title : Leather Finishing.

2:30 Hours / 60 marks Enrolment No. | | | | | | | | | |

***Instructions*:**
1. Attempt all the questions.
2. Illustrate your answers with neat sketches wherever necessary.
3. Use of Mathematical Tables, Steam Table and Pocket Calculator (non-programmable) is permissible.
4. Marks on Right Hand Side indicate full marks for the question.
5. Assume suitable additional data, if necessary
6. CO=COURSE OUTCOMES, L=LEVELS

Q.1 Attempt any SIX **12 Marks**

a. List any four post finishing Machines. **[CO-2, L-R]**
b. Define Protein Finish. **[CO-4, L-R]**
c. Define lining Leather. **[CO-6, L-R]**
d. List any two types of Finishing Method. **[CO-1, L-R]**
e. Define Resin Finish. **[CO-4, L-R]**
f. List any four pre Finishing machines. **[CO-5, L-R]**
g. Define Garment Leather. **[CO-6, L-R]**
h. Define PV finish. **[CO-1, L-R]**
i. List any four leather testing machine. **[CO-2, L-A]**

Q.2 Attempt any THREE **12 Marks**

a. Explain Glazing Machine. **[CO-2, L-A]**
b. Explain Lactometer test **[CO-5, L-A]**
c. Differenciate between Organic Pigment & Inorganic Pigment. **[CO-3, L-U]**
d. State the advantage of setting machine. **[CO-1, L-U]**

Q. 3 Attempt any THREE **12 Marks**

a. State the physical characteristic of suede Leather. **[CO-6, L-U]**
b. Explain any two post Finishing machine operation. **[CO-4, L-A]**
c. State the characteristic of protein finish Leather. **[CO-3, L-U]**
d. Explain wet rub fatness & Dry rub fastness test **[CO-5, L-A]**

Q. 4 Attempt any FOUR **12 Marks**

a. State the characteristics of Foil finish leather. **[CO-3, L-U]**
b. Describe the Gradation and section of pre-finished leather for final Finishing. **[CO-1, L-U]**
c. Explain shrinkage temperature test. **[CO-5, L-A]**
d. State the advantages of Auto Spray machine. **[CO-2, L-U]**
e. State the physical characteristic of nubuck Leather. **[CO-6, L-U]**

Q. 5 Attempt any TWO **12 Marks**

a. Write the process of Resin Finish leather for corrected grain Finishing. **[CO-4, L-A]**

b. Make flow chart of Protein finish process from Dyed crust. **[CO-3, L-U]**

c. Explain Apparent Density and Real Density for Finished leather. **[CO-5, L-U]**

****End****

EVEN 2025-26 **LG23104**

GOVERNMENT POLYTECHNIC MUMBAI
TERM END EXAMINATION

Programme : **L.G.F.T (Sandwich Pattern)**
Course Title : **Leather Goods Designing**

2:30 Hours / 60 marks Enrolment No. | | | | | | | | | |

Instructions:
1. Attempt all the questions.
2. Illustrate your answers with neat sketches wherever necessary.
3. Use of Mathematical Tables, Steam Table and Pocket Calculator (non-programmable) is permissible.
4. Marks on Right Hand Side indicate full marks for the question.
5. Assume suitable additional data, if necessary
6. CO=COURSE OUTCOMES, L=LEVELS

Q.1 Attempt any SIX **12 Marks**

a. Define copy design. **[CO-1, L-R]**
b. Define leather lining material. **[CO-4, L-R]**
c. List any four small leather goods. **[CO-3, L-R]**
d. Define latex. **[CO-5, L-R]**
e. List any four medium leather goods. **[CO-3, L-R]**
f. Define neoprene adhesive. **[CO-5, L-R]**
g. Define flat-bed sewing machine. **[CO-6, L-R]**
h. Define leather goods. **[CO-1, L-R]**
i. Define geometrical construction. **[CO-2, L-R]**

Q.2 Attempt any THREE **12 Marks**

a. Describe need of favorite component in ladies bag. **[CO-3, L-U]**
b. Explain how you will make creative design from copy design. **[CO-1, L-U]**
c. Describe the role of pattern design. **[CO-2, L-U]**
d. Sketch and label any one of heavy leather goods. **[CO-4, L-U]**

Q. 3 Attempt any THREE **12 Marks**

a. Differentiate between clicking pattern and fix pattern. **[CO-2, L-U]**
b. Differentiate between natural adhesive and manmade adhesive. **[CO-5, L-U]**
c. Differentiate between post bed sewing machine and flatbed sewing machine. **[CO-6, L-U]**
d. Differentiate between laptop bag and office bag. **[CO-3, L-U]**

Q. 4 Attempt any FOUR **12 Marks**

a. Describe craft leather goods. **[CO-3, L-U]**
b. Sketch anyone small leather goods and make it creative. **[CO-1, L-A]**
c. Describe assembling process. **[CO-6, L-A]**
d. Describe the role of accessories and grinderies. **[CO-2, L-U]**
e. Explain the purpose of heavy leather goods. **[CO-4, L-A]**

Q. 5 Attempt any TWO **12 Marks**

a. Describe any one type of small leather goods with their compartment, with neat sketch. **[CO-4, L-A]**

b. Differentiate between fix costing and variable costing. **[CO-6, L-U]**

c. Explain in detail about reinforcement material with any two example. **[CO-5, L-U]**

****End****

EVEN 2025-26

LG23106

GOVERNMENT POLYTECHNIC MUMBAI
TERM END EXAMINATION

Programme : **Leather Goods and Footwear Technology**
Course Title : **Principles of Post Tanning.**

2:30 Hours / 60 marks Enrolment No. | | | | | | | | | | |

Instructions:
1. Attempt all the questions.
2. Illustrate your answers with neat sketches wherever necessary.
3. Use of Mathematical Tables, Steam Table and Pocket Calculator (non-programmable) is permissible.
4. Marks on Right Hand Side indicate full marks for the question.
5. Assume suitable additional data, if necessary
6. CO=COURSE OUTCOMES, L=LEVELS

Q.1 Attempt any SIX **12 Marks**

a. State the object of trimming before starting of post crusting operation. **[CO-6, L-U]**
b. State the object of pilling after crusting. **[CO-6, L-U]**
c. Define nubuck leather & suede leather. **[CO-4, L-R]**
d. Define Re-chroming. **[CO-1, L-R]**
e. State the role of slicking after crusting. **[CO-5, L-U]**
f. State any two properties of Garment leather. **[CO-4, L-U]**
g. State the object Glaring machine. **[CO-1, L-U]**
h. Define combination Tanning. **[CO-1, L-R]**
i. State the object of sammying machine. **[CO-2, L-R]**

Q.2 Attempt any THREE **12 Marks**

a. Explain the advantage of Retanning operation in making leather. **[CO-5, L-U]**
b. Explain any four physical properties which should be present in finished leather during making small leather goods. **[CO-4, L-U]**
c. Compare between chrome Retanning & Semi Chrome tanning. **[CO-1, L-U]**
d. Compare between vegetable base fat liquor & synthetic fat liquor. **[CO-3, L-U]**

Q. 3 Attempt any THREE **12 Marks**

a. Explain any four physical properties which should be present in finished leather during making Heavy leather goods. **[CO-4, L-U]**
b. Explain any two type of vegetable tanning reagent & their advantage in tanning. **[CO-3, L-U]**
c. Explain the function of conveyer belt in making leather. **[CO-6, L-U]**
d. Differentiate between splitting machine & shaving machine operation. **[CO-2, L-A]**

Q. 4 Attempt any FOUR **12 Marks**

a. Explain the advantage of fixing with acid in crusting operation in wet end process. **[CO-5, L-U]**

b. State the advantage of vegetable tanning reagent use during leather processing. **[CO-3, L-U]**

c. Explain the use of various grit paper in buffing operation. **[CO-6, L-A]**

d. State the advantage of making white crust instead of Dyed crust. **[CO-4, L-U]**

e. Explain about crusting drum with their R.P.M. **[CO-2, L-U]**

Q. 5 Attempt any TWO **12 Marks**

a. Explain following terms (Any Three)
i) Replacement syntan ii) Dye leveling syntan
iii) Dispersing syntan iv) Bleaching syntan. **[CO-3, L-U]**

b. Explain following terms (Any Three)
i) Oil-veg Tanning ii) Formaldehyde oil Tanning.
iii) White & Dyed crust. iv) Advantages of combination Tanning. **[CO-1, L-U]**

c. Explain in detail physical properties require in finished Upper leather for making footwear (Any Six) **[CO-4, L-U]**

****End****

EVEN 2025-26 **LG23608**

GOVERNMENT POLYTECHNIC MUMBAI
TERM END EXAMINATION

Programme : Leather Goods and Footwear Technology.
Course Title : Book Keeping and Costing.

2:30 Hours / 60 marks Enrolment No. | | | | | | | | | | |

Instructions:
1. Attempt all the questions.
2. Illustrate your answers with neat sketches wherever necessary.
3. Use of Mathematical Tables, Steam Table and Pocket Calculator (non-programmable) is permissible.
4. Marks on Right Hand Side indicate full marks for the question.
5. Assume suitable additional data, if necessary
6. CO=COURSE OUTCOMES, L=LEVELS

Q.1 Attempt any SIX **12 Marks**

a. Define Breakeven Point. **[CO-6, L-R]**
b. List any four types of costing. **[CO-2, L-R]**
c. Define financial year. **[CO-4, L-R]**
d. Define Costing. **[CO-5, L-R]**
e. Define Journal Book. **[CO-1, L-R]**
f. Define financial accounting. **[CO-2, L-R]**
g. Define costing sheet. **[CO-5, L-R]**
h. State any two types of entry Book. **[CO-1, L-R]**
i. Define Narration. **[CO-4, L-R]**

Q.2 Attempt any THREE **12 Marks**

a. Explain transfer entry. **[CO-1, L-U]**
b. Differentiate Between capital & assets **[CO-4, L-U]**
c. Explain the marginal costing in details. **[CO-6, L-A]**
d. Explain financial accounting. **[CO-2, L-U]**

Q. 3 Attempt any THREE **12 Marks**

a. State and explain the object of cost accounting. **[CO-2, L-U]**
b. Explain closing entry. **[CO-3, L-U]**
c. Explain cost sheet format. **[CO-5, L-A]**
d. Explain the purpose of breakeven point in the business. **[CO-6, L-U]**

Q. 4 Attempt any FOUR **12 Marks**

a. Differentiate between goods tax and service tax. **[CO-6, L-U]**
b. Explain in details about taxation. **[CO-4, L-U]**
c. Explain accounting management **[CO-2, L-A]**
d. Explain Subsidiary book. **[CO-1, L-U]**
e. Differentiate between sales & purchase.(Any four points) **[CO-4, L-U]**

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Q. 5 Attempt any TWO **12 Marks**

a. Explain the purpose of trial balance in detail. **[CO-3, L-A]**

b. Explain any three type of costing. **[CO-5, L-U]**

c. Explain the required Accounting details to be considered during financial year for accounting. **[CO-4, L-A]**

****End****

EVEN 2025-26 **LG23103**

GOVERNMENT POLYTECHNIC MUMBAI
TERM END EXAMINATION

Programme : **LGFT (Sandwich Pattern)**
Course Title : **Basic Leather Tanning**

2:30 Hours / 60 marks Enrolment No. | | | | | | | | | |

***Instructions*:**
1. Attempt all the questions.
2. Illustrate your answers with neat sketches wherever necessary.
3. Use of Mathematical Tables, Steam Table and Pocket Calculator (non-programmable) is permissible.
4. Marks on Right Hand Side indicate full marks for the question.
5. Assume suitable additional data, if necessary
6. CO=COURSE OUTCOMES, L=LEVELS

Q.1 Attempt any SIX **12 Marks**

a. Define preservation. **[CO-2, L-R]**
b. Define green weight. **[CO-4, L-R]**
c. List any four natural sources of vegetable tanning material. **[CO-6, L-R]**
d. Define raw weight for hide. **[CO-3, L-R]**
e. List any four uses of leather in modern age. **[CO-1, L-R]**
f. List any two bleaching agent for Vegetable tanned leather. **[CO-6, L-A]**
g. Define deliming process. **[CO-4, L-A]**
h. List any four post-mortem defects. **[CO-3, L-R]**
i. Define hide and skin. **[CO-2, L-R]**

Q.2 Attempt any THREE **12 Marks**

a. Explain any two anti-mortem defects in raw hide & skin. **[CO-3, L-U]**
b. Explain physical properties of chrome tanned leather. **[CO-5, L-U]**
c. Sketch and label components of raw hide and skin. **[CO-1, L-A]**
d. Explain the Barko-meter. **[CO-6, L-U]**

Q. 3 Attempt any THREE **12 Marks**

a. Explain advantages of preservation for raw hide and skin. **[CO-2, L-U]**
b. State the objectives of soaking. **[CO-4, L-U]**
c. Sketch and label cross section of raw hide and skin. **[CO-1, L-A]**
d. State the physical properties of alum tanned leather. **[CO-5, L-U]**

Q. 4 Attempt any FOUR **12 Marks**

a. Explain Sukti's preservation method. **[CO-2, L-A]**
b. State the objectives of liming. **[CO-4, L-U]**
c. State the objectives of bleaching in vegetable tanned leather. **[CO-6, L-U]**
d. Explain the natural proteins found in raw hide and skin. **[CO-1, L-U]**
e. State the properties of oil tanned leather. **[CO-5, L-U]**

Q. 5 Attempt any TWO **12 Marks**

a. Explain any three **[CO-6, L-U]**
(i) Wattle extract (ii) G.S. powder (iii) Babul bark (iv) Myroballen nuts.
b. Differentiate between light pickle & normal pickle. **[CO-4, L-A]**
c. Explain boiling test of chrome tanned leather in detail. **[CO-5, L-A]**

****End****

EVEN 2025-26

LG23101

GOVERNMENT POLYTECHNIC MUMBAI
TERM END EXAMINATION

Programme : **LGFT (Sandwich Pattern)**
Course Title : **Material Technology**

2:30 Hours / 60 marks Enrolment No. | | | | | | | | | |

***Instructions*:**
1. Attempt all the questions.
2. Illustrate your answers with neat sketches wherever necessary.
3. Use of Mathematical Tables, Steam Table and Pocket Calculator (non-programmable) is permissible.
4. Marks on Right Hand Side indicate full marks for the question.
5. Assume suitable additional data, if necessary
6. CO=COURSE OUTCOMES, L=LEVELS

Q.1 Attempt any SIX **12 Marks**

a. Define lining material. **[CO-2, L-R]**
b. Define man-made thread. **[CO-6, L-U]**
c. Define leather. **[CO-1, L-R]**
d. Define steel toe cap. **[CO-3, L-R]**
e. Define hot melt adhesive. **[CO-6, L-R]**
f. List any four types leather used in leather goods. **[CO-2, L-R]**
g. List any four types of non-leather. **[CO-1, L-R]**
h. Define the meaning of reinforcement material. **[CO-3, L-R]**
i. Define zip and fastener. **[CO-6, L-U]**

Q.2 Attempt any THREE **12 Marks**

a. Distinguish between rubber heel & wooden heel. **[CO-4, L-U]**
b. Differentiate between leather & non-leather. **[CO-3, L-U]**
c. Distinguish between gusset fitting & handle fitting. **[CO-5, L-U]**
d. Explain how fabric get convert from fibre (show in table form). **[CO-1, L-U]**

Q. 3 Attempt any THREE **12 Marks**

a. Explain the role of EVA in making footwear. **[CO-4, L-U]**
b. Explain any four properties of leather use in making footwear. **[CO-1, L-U]**
c. Explain in detail about precaution should be taken while packaging footwear before dispatching. **[CO-6, L-A]**
d. Explain any two types of reinforcement material used in making leather goods. **[CO-3, L-A]**

Q. 4 Attempt any FOUR **12 Marks**

a. Explain leather board. **[CO-3, L-U]**
b. Explain welt knitting. **[CO-1, L-U]**
c. Explain the importance of bottom in footwear. **[CO-4, L-U]**
d. Explain any three physical properties of lining material required in making footwear. **[CO-2, L-U]**
e. Explain in detail about velcrow used in making leather goods. **[CO-5, L-U]**

Q. 5 Attempt any TWO **12 Marks**

a. Explain any three key points for good quality adhesive. **[CO-5, L-U]**

b. Write short notes (any three) i) Covered insole ii) Polyvinyl chloride sole iii) Leather board iv) Sandwich insole. **[CO-4, L-R]**

c. Write short notes (any three) i) Hinges ii) Clips iii) Eyelets iv) D-ring. **[CO-6, L-R]**

****End****

EVEN 2025-26 **LG23607**

GOVERNMENT POLYTECHNIC MUMBAI
TERM END EXAMINATION

Programme : **LGFT (Sandwich Pattern)**
Course Title : **Footwear Chemistry**

2:30 Hours / 60 marks Enrolment No. | | | | | | | | | | |

***Instructions*:**
1. Attempt all the questions.
2. Illustrate your answers with neat sketches wherever necessary.
3. Use of Mathematical Tables, Steam Table and Pocket Calculator (non-programmable) is permissible.
4. Marks on Right Hand Side indicate full marks for the question.
5. Assume suitable additional data, if necessary
6. CO=COURSE OUTCOMES, L=LEVELS

Q.1 Attempt any SIX **12 Marks**

a. Define isotopes. Mention its example. **[CO-1, L-R]**
b. List the name of any two pigments used in footwear industries. **[CO-3, L-R]**
c. State two differences between aldehyde and ketone. **[CO-2, L-R]**
d. Define thermoplastics. Mention its example. **[CO-4, L-R]**
e. Mention any two examples of solvent based adhesive. **[CO-5, L-R]**
f. Define electronegativity. Write its example. **[CO-1, L-R]**
g. State the functional group of alcohol and amine. **[CO-2, L-R]**
h. Name the two types of rubber used in shoe. **[CO-4, L-R]**
i. Mention the use of pressure sensitive adhesive. **[CO-5, L-R]**

Q.2 Attempt any THREE **12 Marks**

a. Compare properties of solvent based and water based polish. **[CO-3, L-A]**
b. Explain the application of PVA and PU adhesive. **[CO-5, L-U]**
c. Differentiate between aliphatic and aromatic compound. **[CO-2, L-U]**
d. Distinguish between ionic bond and covalent bond. **[CO-1, L-U]**

Q. 3 Attempt any THREE **12 Marks**

a. Distinguish between natural and synthetic adhesive. **[CO-5, L-U]**
b. Compare the characteristics of PU and PVC. **[CO-4, L-R]**
c. Describe natural Vs synthetic wax. **[CO-3, L-U]**
d. Describe the shape of S and P orbitals. **[CO-1, L-A]**

Q. 4 Attempt any FOUR **12 Marks**

a. Explain the importance of PU sole in footwear industries. **[CO-4, L-U]**
b. Give the application of hot-melt adhesive in footwear manufacturing. **[CO-5, L-A]**
c. Explain general characteristics of organic compound. **[CO-2, L-U]**
d. Explain Hund's rule with an example. **[CO-1, L-U]**
e. Classify waxes with an example. **[CO-3, L-U]**

Q. 5 Attempt any TWO **12 Marks**

a. (i) Explain the polymerization of alkene with suitable example. **[CO-2, L-U]**
(ii) List the name and structure of two hetrocyclic compound.

b. Explain shoe polish preparation method. **[CO-3, L-A]**

c. Describe the composition, feature and uses of natural rubber. **[CO-4, L-U]**

****End****

EVEN 2025-26

LG23112

GOVERNMENT POLYTECHNIC MUMBAI
TERM END EXAMINATION

Programme : LGFT (Sandwich Pattern)
Course Title : Footwear Construction

2:30 Hours/ 60 marks Enrolment No. | | | | | | | | | |

Instructions:
1. Attempt all the questions.
2. Illustrate your answers with neat sketches wherever necessary.
3. Use of Mathematical Tables, Steam Table and Pocket Calculator (non-programmable) is permissible.
4. Marks on Right Hand Side indicate full marks for the question.
5. Assume suitable additional data, if necessary
6. CO=COURSE OUTCOMES, L=LEVELS

Q.1 Attempt any SIX **12 Marks**

a. Define welted construction. **[CO-3, L-R]**
b. List any four bill of material. **[CO-1, L-R]**
c. Define costing. **[CO-2, L-R]**
d. Define footwear. **[CO-1, L-R]**
e. List any four types of closed footwear. **[CO-3, L-R]**
f. State full form DVP. **[CO-4, L-R]**
g. List any four types of construction in footwear. **[CO-3, L-R]**
h. Define slip-on lasting. **[CO-5, L-R]**
i. Define McKay construction. **[CO-6, L-R]**

Q.2 Attempt any THREE **12 Marks**

a. Explain assembling process of stuck on construction. **[CO-1, L-A]**
b. State advantages and disadvantages of machine welted construction.(each four) **[CO-3, L-U]**
c. Explain post assembling process and inspection. **[CO-4, L-U]**
d. Explain operation flow chart of McKay construction shoe. **[CO-6, L-A]**

Q. 3 Attempt any THREE **12 Marks**

a. State advantages and disadvantages of stitch down construction. **[CO-2, L-U]**
b. Sketch Derby shoe and label it. **[CO-4, L-A]**
c. Compare stitch down construction and stuck on construction. (any four point) **[CO-5, L-U]**
d. Explain post assembling process and inspection of machine Sewn or McKay construction. **[CO-6, L-A]**

Q. 4 Attempt any FOUR **12 Marks**

a. Explain assembling process of welted construction. **[CO-3, L-A]**
b. Explain packaging. **[CO-2, L-U]**
c. Explain finishing of shoe Direct Injection Molding Process. **[CO-4, L-A]**
d. Explain assembling process of McKay construction. **[CO-6, L-U]**
e. Explain Californian construction. **[CO-5, L-U]**

Q. 5 Attempt any TWO **12 Marks**

a. Draw process flow chart of stitch down construction of shoe. **[CO-2, L-U]**

b. Explain drafting operation with diagram. **[CO-1, L-A]**

c. Explain any three bill of material. **[CO-5, L-U]**

EVEN 2025-26 **LG23102**

GOVERNMENT POLYTECHNIC MUMBAI
TERM END EXAMINATION

Programme : **Leather Goods and Footwear Technology**
Course Title : **Anatomy of Footwear.**

2:30 Hours / 60 marks Enrolment No. | | | | | | | | | |

***Instructions*:**
1. Attempt all the questions.
2. Illustrate your answers with neat sketches wherever necessary.
3. Use of Mathematical Tables, Steam Table and Pocket Calculator (non-programmable) is permissible.
4. Marks on Right Hand Side indicate full marks for the question.
5. Assume suitable additional data, if necessary
6. CO=COURSE OUTCOMES, L=LEVELS

Q.1 Attempt any SIX **12 Marks**

a. State the types of footwear used in modern era. (any two) **[CO-1, L-R]**
b. State the types of footwear used in early Twentieth century (1900-1950). (any two) **[CO-1, L-R]**
c. Define Tendon. **[CO-2, L-R]**
d. Define Blister. **[CO-3, L-R]**
e. State types of female footwear. **[CO-4, L-R]**
f. Define last. **[CO-5, L-R]**
g. State the name of components of upper of open footwear. **[CO-5, L-R]**
h. State the machine required in prelasting operations. **[CO-6, L-R]**
i. Define Cut Edge Insole. **[CO-6, L-R]**

Q.2 Attempt any THREE **12 Marks**

a. Draw neat labeled diagram of Flip flop chappal. **[CO-1, L-A]**
b. Draw neat labeled diagram of human foot. **[CO-2, L-A]**
c. Explain Hammer toe & Mullet toe. **[CO-3, L-U]**
d. Explain Hallux Valgus with neat diagram. **[CO-3, L-A]**

Q. 3 Attempt any THREE **12 Marks**

a. Draw neat diagram of medial longitudinal Arch and state its function in brief. **[CO-2, L-A]**
b. Draw neat labeled diagram of Oxford Shoe. **[CO-4, L-A]**
c. Compare Human foot and last. **[CO-5, L-U]**
d. State role of machine used in making upper. **[CO-6, L-R]**

Q. 4 Attempt any FOUR **12 Marks**

a. Define Sandal and state its advantages. **[CO-1, L-U]**
b. State the names of all bones present in foot. **[CO-2, L-U]**
c. State advantages of Moccasin Shoes. **[CO-4, L-U]**
d. Explain masking operation pattern making for Insole and Upper. **[CO-5, L-A]**
e. Explain Covering Insole. **[CO-6, L-U]**

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Q. 5 Attempt any TWO **12 Marks**

a. Sketch and explain Court Shoe & Peep Tee Shoe. **[CO-4, L-A]**

b. Make model for calculating material consumption for open footwear. **[CO-5, L-A]**

c. Explain in detail about any three types of sewing machine used in footwear manufacturing. **[CO-6, L-A]**

****End****

EVEN 2025-26 **LG23110**

GOVERNMENT POLYTECHNIC MUMBAI
TERM END EXAMINATION

Programme : **Leather Goods and footwear Technology**
Course Title : **Footwear Fabrication-II**

2:30 Hours / 60 marks Enrolment No. | | | | | | | | | |

Instructions:
1. Attempt all the questions.
2. Illustrate your answers with neat sketches wherever necessary.
3. Use of Mathematical Tables, Steam Table and Pocket Calculator (non-programmable) is permissible.
4. Marks on Right Hand Side indicate full marks for the question.
5. Assume suitable additional data, if necessary
6. CO=COURSE OUTCOMES, L=LEVELS

Q.1 Attempt any SIX **12 Marks**

a. List any four types of last. **[CO-1, L-R]**
b. List any four types of Heel. **[CO-2, L-R]**
c. Define shank. **[CO-2, L-U]**
d. Define Adhesion **[CO-3, L-U]**
e. List any four types of closed footwear. **[CO-4, L-R]**
f. Define footwear. **[CO-4, L-R]**
g. Define TPR sole. **[CO-1, L-R]**
h. Define Packaging. **[CO-5, L-R]**
i. Define finishing. **[CO-5, L-G]**

Q.2 Attempt any THREE **12 Marks**

a. Explain Nailing machine and Riveting machine. **[CO-1, L-U]**
b. Explain any four properties of insole. **[CO-2, L-U]**
c. Sketch and label oxford shoe. **[CO-4, L-A]**
d. Explain Any two types of Dressing
   i) Spray Dressing
   ii) Antique Dressing
   iii) Suede Dressing **[CO-5, L-A]**

Q. 3 Attempt any THREE **12 Marks**

a. Explain Metal shank and wooden shank. **[CO-2, L-U]**
b. Explain method of adhesive application. **[CO-3, L-U]**
c. Distriqush between stitch down construction and stuck on construction. **[CO-4, L-U]**
d. Explain pre-assembling material Cost and assembling material cost. **[CO-6, L-U]**

Q. 4 Attempt any FOUR **12 Marks**

a. Describe sole cleaning. **[CO-3, L-A]**
b. Describe inside attachment of Heel. **[CO-3, L-U]**
c. Sketch and Label monk shoe. **[CO-4, L-A]**
d. Describe wastage. **[CO-6, L-U].**
e. Explain costing. **[CO-6, L-U]**

Q. 5 Attempt any TWO **12 Marks**

a. Explain following (any two)
   i) Sole attaching press machine.
   ii) Side Lasting
   iii) Toe Lasting **[CO-1, L-A]**
b. Explain abrasion process of bottoming. **[CO-3, L-A]**
c. Explain Technical check list point for inspection of finished closed footwear. **[CO-5, L- U]**

****End****

EVEN 2025-26 **LG23502**

GOVERNMENT POLYTECHNIC MUMBAI
TERM END EXAMINATION

Programme : **LGFT (Sandwich Pattern)**
Course Title : **Management in Leather Sector**

2:30 Hours / 60 marks Enrolment No. | | | | | | | | | | |

***Instructions*:**
1. Attempt all the questions.
2. Illustrate your answers with neat sketches wherever necessary.
3. Use of Mathematical Tables, Steam Table and Pocket Calculator (non-programmable) is permissible.
4. Marks on Right Hand Side indicate full marks for the question.
5. Assume suitable additional data, if necessary
6. CO=COURSE OUTCOMES, L=LEVELS

Q.1 Attempt any SIX **12 Marks**

a. State the long form of SEO and SEM. **[CO-3, L-R]**
b. Define leadership. **[CO-5, L-R]**
c. State the list any four types of 'P's used in marketing. **[CO-2, L-R]**
d. Define 'Production'. **[CO-4, L-R]**
e. List any four types of management. **[CO-1, L-R]**
f. Define digital marketing. **[CO-3, L-R]**
g. State the long form of ISO and ISI. **[CO-5, L-R]**
h. Define marketing. **[CO-2, L-R]**
i. State any two benefits of efficient production management. **[CO-4, L-R]**

Q.2 Attempt any THREE **12 Marks**

a. Describe marketing management. **[CO-1, L-U]**
b. Explain B2B channel. **[CO-6, L-U]**
c. Explain in details about the function of marketings. **[CO-2, L-U]**
d. Explain the precautions should be considered while production. **[CO-4, L-U]**

Q. 3 Attempt any THREE **12 Marks**

a. Explain fashion merchandising. **[CO-6, L-U]**
b. State any four advantages of digital marketing. **[CO-3, L-U]**
c. Explain top level management. **[CO-1, L-U]**
d. Describe the role of ISO while making quality product. **[CO-5, L-U]**

Q. 4 Attempt any FOUR **12 Marks**

a. Explain brand image about product. **[CO-2, L-A]**
b. State the responsibility of the quality controlling manger of a manufacturing unit. **[CO-5, L-U]**
c. Explain human resources management. **[CO-1, L-U]**
d. Explain any one social media marketing method. **[CO-3, L-U]**
e. Describe marketing management strategies. **[CO-2, L-U]**

Q. 5 Attempt any TWO **12 Marks**

a. Explain the role of production manager in footwear industries. **[CO-4, L-A]**

b. Differentiate between fashion merchandising & seasonal merchandising. **[CO-6, L-U]**

c. Explain any three types of popular digital marketing technique. **[CO-3, L-U]**

****End****