

# INDIAN INSTITUTE OF HANDLOOM TECHNOLOGY

BARGARH/GUWAHATI/FULIA/JODHPUR/SALEM/VARANASI/CHAMPA/KANNUR/KHTI-GADAG/SPKM-IIH-VENKATAGIRI

Diploma in Handloom & Textile Technology

SEMESTER EXAMINATION-Nov/Dec-2021

(Regulation-2014)

Year / Semester: 5<sup>th</sup> Semester

Time: 90 minute

Subject Code & Name: 5.1 Weaving Technology & Textile Calculations- IV

Max.Marks:40

## PART-A

(4×2=8 marks)

Answer any four questions. The answer shall be within 2 or 3 sentences:-

1. What do you mean by "Multi-phase Weaving machine"?
2. Classify the jacquard machine.
3. What are the uses of inverted hook jacquard machine?
4. Write the equation between the yarn diameter and count for woollen yarn as per Ashenhursts' formula.
5. Define the term "Cover Factor of a fabric".

## PART-B

4 X 8 = 32marks

Answer any four questions from Q.No 6 to 10 in detail. Either A or B has to be answered in each question.

6. A. Explain the weft insertion technique of projectile loom with neat diagram. (8)  
(OR)  
B. Explain the weft insertion technique of flexible double Ravier loom with neat diagram. (8)
7. A. Explain briefly the functions of different parts of jacquard shedding mechanism with neat diagram. (8)  
(OR)  
B. Explain the working principle of double-lift double cylinder jacquard machine with neat diagram. (8)
8. A. Explain the mechanism and working principle of cross-border jacquard. (8)  
(OR)  
B. Explain the mechanism and working principle of Self-Twillling jacquard. (8)
9. A. Calculate the diameter of the following yarns using Ashenhursts' formula. (8)  
(i) 24<sup>s</sup> Woollen Yarn (ii) 60<sup>s</sup> Spun Silk Yarn (iii) 2/40<sup>s</sup> Cotton Yarn  
(OR)  
B. Find the diameter of the following yarns using Pierce formula. (8)  
(i) 20<sup>s</sup> Linen Yarn (ii) 40 x 2 tex polyester Yarn (iii) 3/2/40<sup>s</sup> Cotton cable Yarn
10. A. Find out the warp and weft percentage cover of the cloth from the following particulars (8)  
60 denier nylon x 48<sup>s</sup> worsted ; 96 EPI x 72 PPI  
(OR)  
B. Compare the relative closeness of warp yarns in the following two plain clothes. (8)  
i) Warp: 16<sup>s</sup> Cotton: 50 ends per inch  
ii) Warp: 36<sup>s</sup> Cotton: 84 ends per inch

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Diploma in Handloom & Textile Technology

SEMESTER EXAMINATION-Nov/Dec-2021

(Regulation-2014)

Year / Semester: THIRD SEMESTER

Time: 90 minute

Subject Code & Name: 3.1 WEAVING TECHNOLOGY AND TEXTILE CALCULATIONS-II

Max.Marks:40

## PART-A

(4×2=8 marks)

Answer any four questions. The answer shall be within 2 or 3 sentences:-

1. What are the main limitations of barrel dobbie over other handloom dobbies?
2. Why reversing motion is essential for negative tappet shedding?
3. Define eccentricity of sley
4. What is the resultant count of 20/2 tex yarn?
5. How is possible to rotate driver and driven wheel in same direction?

## PART-B

4 X 8 = 32marks

Answer any four questions from Q.No 6 to 10 in detail. Either A or B has to be answered in each question.

6. A. With a neat sketch explain the working of a barrel dobbie? (8)  
(OR)  
B. Prepare a lay out plan for accommodating 25 frame looms and also discuss the minimum facilities required in an industrial handloom unit? (8)
7. A. Explain the principle, construction and working of negative tappet shedding mechanism with neat sketch (8)  
(OR)  
B. Explain the working of multi cylinder slasher sizing machine with a neat sketch? (8)
8. A. Explain in detail the steps of constructing a shedding tappet suitable for plain weave by assuming necessary measurements and other relevant data? (8)  
(OR)  
B. With a neat sketch explain the working of Negative let off motion (8)

9. A. Calculate the cost per kg. of a two fold yarn produced by twisting together two threads, one of 80 tex and the other of 60 tex. The cost per kg of 80 tex and 60 tex yarns are Rs.200/- and Rs.300/- respectively. Twisting charges Rs.50/- per kg. Ignore waste and contraction due to twisting. Add 10% for cost fluctuation? (8)

(OR)

- B. A warp sheet comprised of 2500 ends in the ratio of 4 threads of  $2/100^s$  Ne yarn in every thread of  $2/80^s$  worsted. The warp weighs 600 pounds. Find out the average count of warp and also the weight of individual yarn. (8)

10. A. A grooved pulley "A" having a radius of 8 inches from the centre of the pulley to the apex of the groove, is running at a speed of 360 r.p.m. Another grooved pulley "B" of 3 inches diameter is being driven by the pulley "A" by means of a cotton rope  $\frac{1}{2}$  inch in diameter. Assuming that there is a loss of 4 % of speed by slippage, what is the speed of the pulley "B"? (8)

(OR)

- B. i) Write a short note on spur gears and its relation to size and direction of rotation (4)
- ii) Calculate the size of the loom pulley required to impart a speed of 300 r.p.m. to a loom which is driven from a line shaft of 250 r.p.m. The line shaft drum has a diameter of 20 inches? (4)

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Diploma in Handloom & Textile Technology

SEMESTER EXAMINATION-Nov/Dec-2021

(Regulation-2014)

Year / Semester: I Year

Time: 90 Minutes

Subject Code & Name: 1.1. English and Communication Skill

Marks: 40 Marks

**PART-A**

**(1×8=8 marks)**

Answer any **eight** questions.

- 1) Name the part of speech of each underlined word.  
Eg. I love sweets    Ans: love-verb
  1. The children like to play cricket.
  2. Mary went to the market.
- 2) Fill in the blanks with suitable articles.
  1. Iitema is \_\_\_\_\_ engineer. (a/an)
  2. \_\_\_\_\_ Ganges is a holy river in India. (the/ a)
- 3) Underline the Nouns.
  1. New Delhi is the capital of India.
  2. He is playing football.
- 4) Underline the Pronouns.
  1. He is Hemanth.
  2. Ramesh is her brother.
- 5) Underline Adverbs.
  1. The children are playing outside.
  2. She writes neatly.
- 6) Fill in the blanks with correct form of verb.
  1. Neither he or his friends \_\_\_\_\_ (has/have) any idea about the place.
  2. We \_\_\_\_\_ (is/are) going to Chennai tomorrow.
- 7) Fill in the blanks with suitable prepositions. (in, at, for, between)
  1. Ravi sits \_\_\_\_\_ Ramesh and Harish.
  2. I am waiting \_\_\_\_\_ my friend.
- 8) Pick out the conjunction in the following sentences.
  1. Ram is poor but he helps others.
  2. It was raining heavily outside and so I could not go out.
- 9) Change the form of the tense in the following verbs.

<b>Present</b>	<b>Past</b>	<b>Past Participle</b>
1. Eat	Ate	_____
2. Play	_____	Played
- 10) Recognize whether the following sentences are simple, compound or complex.
  1. John is the son of James.
  2. Hari is poor but he is a hard-working person.



**PART-B**

**4 X 8 = 32 marks**

Answer any **four** questions from Q.No 11 to 15 in detail. **Either A or B** has to be answered in each question.

11) A. Write a letter to the Inspector of Police in your locality complaining about the frequent theft that occurs in your housing colony.

**(Or)**

B. Write a letter to your friend asking him to accompany you to attend an interview in Chennai.

12) A. Write a Letter to the Sales executive of HCL company to request him to send the quotation for purchasing 50 computers.

**(Or)**

B. Read the passage and answer the questions below.

One may wonder, What is the lowest common denominator of Indian culture today? The attractive Hema Malini? The songs of Vividh Bharati? Or the mouth-watering Masala Dosa? Delectable as these may be, each yield pride of place to that false (?) symbol of a new era-the synthetic fibre. In less than twenty years the nylon sari and the terylene shirt have swept the countryside, penetrated to the farthest corners of the land and persuaded every common man, woman and child that the key to success in the present-day world lie in artificial fibers: glass nylon, crepe nylon, terry mixes, polyesters and what have you. More than the bicycles, the wristwatch or the transistor radio, synthetic clothes have come to represent the first step away from the village square.

Q.1. 'The lowest common denominator' of the Indian culture today is \_\_\_\_\_

- (A) Hema Malini
- (B) Songs of Vividh Barati
- (C) Masala Dosa
- (D) Synthetic fibre

Q.2. The synthetic fibre has \_\_\_\_\_

- (A) Always been popular in India
- (B) Become popular during the last twenty years
- (C) Never been popular the last twenty years
- (D) Been as popular as other kinds of fibre

13) A. Develop the following hints into a readable story and give a suitable title.

A rich farmer - lot of land - cattle and servants - two sons - happy life - After some years younger son unhappy - asked for his share of the property - wouldn't listen to father's advice - got his share - sold them all - went away to another country - fell into bad ways - soon all money gone - poor - no one to help him - understood his mistake.

(Or)

B. Write a paragraph on The Benefits of Developing Reading Habit.

14) A. Frame Questions.

A. He is writing an article for a magazine. (What)

B. She comes to college at 9 AM. (When)

C. Ram is going to buy a new bike. (What)

D. Seetha will reach home in the evening. (When)

(Or)

B. Complete the following Dialogue.

John : Do you know that our school is celebrating its golden jubilee next month?

Eddie : Yes, I have heard about it. But \_\_\_\_\_?

John : It's on the 15th of next month. \_\_\_\_\_?

Eddie : Of course, I will be coming. I am eager \_\_\_\_\_ school.

John : I am also looking forward to \_\_\_\_\_.

15) A. Complete the following Dialogue.

Passenger (at Dhanbad Railway Station) : Excuse me. I \_\_\_\_\_.

Clerk : Yes, \_\_\_\_\_?

Passenger : What \_\_\_\_\_ for Delhi?

Clerk : Will you be fine with travelling at night?

Passenger: Yes, \_\_\_\_\_

Clerk : Well you can take the 102 UP then.

Passenger : What \_\_\_\_\_ from Dhanbad?

(Or)

B. Write an Essay on the need of English Communication Skills.

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Diploma in Handloom & Textile Technology

SEMESTER EXAMINATION-Nov/Dec-2021

(Regulation-2014)

Year / Semester: 3<sup>RD</sup> YEAR/SIXTH SEMESTER

Time: 90 minute

Subject Code & Name: 6.2 FABRIC STRUCTURE-V

Max.Marks:40

## PART-A

(4×2=8 marks)

Answer any four questions. The answer shall be within 2 or 3 sentences:-

1. Write any two styles of extra weft figuring technique.
2. How many warp series are used to produce figured Pique fabric?
3. What type of special harness is used to produce Damask fabric?
4. Draw a 3 pick reversible terry weave.
5. Write the purpose of using petni technique used in Kanchipuram Silk saree.

## PART-B

4 X 8 = 32 marks

Answer any four questions from Q.No 6 to 10 in detail. Either A or B has to be answered in each question.

6. A. Sketch a part of jacquard motif in 24 X 24 and develop its complete Extra Weft graph with suitable binding marks in 24 X 48 using 1 ground and 1 figuring weft ratio. (8)  
(OR)  
B. Take a motif on 24 X 24 and indicate its complete structure of extra warp with 1:1 order in 48 X 24. (8)
7. A. Explain the working of pressure harness system for producing damask structure with drafting order, graph preparation. (8)  
(OR)  
B. Mark 4 weaves of 4 pick weft reversible tapestry. (8)
8. A. Draw and Explain the harness building & heald arrangement used for weaving figured pique. (8)  
(OR)  
B. Taking a guide graph in 16 X 12, indicate the complete weave structure of Figured Patent Satin in 48 X 48. (8)
9. A. With a neat sketch explain the working principle of Inverted hook jacquard for weaving figured Terry. (8)  
(OR)  
B. Using 12 X 12 guide graph, mark the complete structure of 4 picks figured terry on 48 X 48. (8)
10. A. Explain the salient features of any four different traditional fabrics of southern states of our Country. (8)  
(OR)  
B. Explain the features and the production method of Paithani and Jamdani saree. (8)

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Diploma in Handloom & Textile Technology

SEMESTER EXAMINATION-Nov/Dec-2021

(Regulation-2014)

Year / Semester: THIRD SEMESTER

Time: 90 minute

Subject Code & Name: 3.2 FABRIC STRUCTURE - II

Max.Marks:40

## PART-A

(4×2=8 marks)

Answer any four questions. The answer shall be within 2 or 3 sentences:-

1. How Many heald shafts are minimum required for producing a weave by combining wavy twill along the cloth with diamond for creating stripe effect.
2. What is wadding and their objectives.
3. What are the main differences between welt & pique.
4. What are reversible & non reversible double cloths?
5. Name the types of wadding threads used in the wadded double cloth.

## PART-B

4 X 8 = 32 marks

Answer any four questions from Q.No 6 to 10 in detail. Either A or B has to be answered in each question.

6. A. Construct a warp distorted thread effect on 14 X 14 and indicate its draft & pegplan. (8)  
(OR)  
B. Indicate the design, draft, pegplan by using satin & sateen to form check effect on 10 X 10. (8)
7. A. Construct twill face Bedford cord weave on 20 X 8 with draft & pegplan. (8)  
(OR)  
B. Construct the crepon Bedford cord weave on 20 X 16. (8)
8. A. Construct design, draft, pegplan & thread interlacement diagram for fast back welt structure on 6 X 12. The wadding picks are 3 & 4 and 7 & 8. (8)  
(OR)  
B. Construct design for welt wadded pique structure repeating on 24 X 24 (20 ground picks & 4 wadded picks) by taking the motif on 8 X 10. (8)
9. A. Construct a self-stitched double cloth by using 3 up 3 down twill for face & 4 up 2 down twill for back and also mention the stitching used. (8)  
(OR)  
B. Explain the different classifications of double cloth with their line diagram. (8)
10. A. Construct cloth interchanging double cloth by using 3 up 1 down twill for face & 1 up 3 down twill for back and vice versa for creating check effect. (8)  
(OR)  
B. Construct warp wadded double cloth by using 2 up 2 down twill for face & 1 up 3 down twill for back. (8)

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Diploma in Handloom and Textile Technology  
FIRST YEAR EXAMINATION -NOV/DEC-2021  
(Regulation-2014)

Year/Semester: 1<sup>st</sup> year  
Subject Code & Name: 1.2 Applied Mathematics

Time: 90 Minutes  
Maximum Marks: 40

PART-A

(4×2=8 marks)

Answer any four questions.

1) Solve:  $\begin{vmatrix} 4 & 6 \\ 2 & 8 \end{vmatrix}$

2) Find the value of  $\frac{1-\tan^2 15^\circ}{1+\tan^2 15^\circ}$

3) Find  $\frac{dy}{dx}$ , if  $y = \sin(\log x)$

4) Evaluate:  $\int x(x-1)^2 dx$

5) Find the median of observation 3, 3, 5, 9, 11.

PART-B

(4 X 8 = 32 marks)

Answer any four questions from Q.No 6 to 10. Either A or B has to be answered in each question.

6) A) Find the inverse of the matrix  $\begin{bmatrix} 1 & 1 & -1 \\ 2 & 1 & 0 \\ -1 & 2 & 3 \end{bmatrix}$  (8)

(OR)

B) Solve the following equations by using CRAMER'S RULE

$$x + y + z = 3, 2x - y + z = 2, 3x + 2y - 2z = 3 \quad (8)$$

7) A) If  $\tan A = \frac{n}{n+1}$ ,  $\tan B = \frac{1}{2n+1}$  prove that  $A + B = 45^\circ$  OR  $\frac{\pi}{4}$  (8)

(OR)

B) If  $A + B + C = 180$ , Prove that  $\sin 2A - \sin 2B + \sin 2C = 4 \cos A \sin B \cos C$  (8)

8) A) If  $y = \cos x - \frac{\sin x}{x+7}$ , then find  $\frac{dy}{dx}$  (8)

(OR)

B) Differentiate  $y = \frac{e^x + \cos x}{1 - \sin x}$  with respect to  $x$ . (8)

9) A) Evaluate  $\int \frac{2x+1}{(x^2+x-5)^2} dx$ , by using substitution method (8)

(OR)

B) Evaluate  $\int x \cos x dx$ , by using integration by parts method. (8)

10) A) Show that the points (2,-2), (8,4), (5,7) and (-1,1) are the vertices of rectangle. (8)

(OR)

D) Find the mean of the following distributions: (8)

Marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70
Frcquency	1	7	24	36	25	6	1

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Diploma in Handloom & Textile Technology

SEMESTER EXAMINATION-Nov/Dec-2021

(Regulation-2014)

Year / Semester: 5<sup>th</sup> Semester

Time: 90 minute

Subject Code & Name: 5.3 Chemical Processing of Textiles- III

Max.Marks:40

## PART-A

(4×2=8 marks)

Answer any four questions. The answer shall be within 2 or 3 sentences:-

1. What happens if the polyester fabric is not heat set before dyeing?
2. State the working principle of beam dyeing machine.
3. Give the glass transition temperature of Nylon 6 & Acrylic fiber.
4. Define transfer printing.
5. Name the photosensitive chemicals used in screen making.

## PART-B

4 X 8 = 32marks

Answer any four questions from Q.No6 to 10 in detail. Either A or B has to be answered in each question.

6. A. Explain the structural parameter of polyester making it difficult to dye. (8)  
(OR)  
B. Explain the method of dyeing polyester using HTHP method. (8)
7. A. Explain the working of HTHP beam dyeing machine with neat sketch. (8)  
(OR)  
B. Explain the process sequence for dyeing polyester/cotton blends. (8)
8. A. Explain the dyeing of Nylon fibre with acid dyes with recipe & procedure. (8)  
(OR)  
B. Explain the dyeing of acrylic fibre with cationic dyes with recipe and procedure. (8)
9. A. Explain the block printing method with its advantages and disadvantages. (8)  
(OR)  
B. Discuss in details the various styles of printing. (8)
10. A. Explain in detail the various methods of screen making. (8)  
(OR)  
B. Explain the various methods of fixation techniques used in printing. (8)

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Diploma in Handloom & Textile Technology

SEMESTER EXAMINATION-Nov/Dec-2021

(Regulation-2014),

Year / Semester: SIXTH SEMESTER

Time: 90 Minutes

Subject Code & Name: 6.3 CHEMICAL PROCESSING OF TEXTILES -IV

Max.Marks:40

**PART-A**

(4×2=8 marks)

**Answer any four questions. The answer shall be within 2 or 3 sentences:-**

1. Write the name of any two hygroscopic agents?
2. Write the function of dispersing agent in printing of polyester with disperse dye?
3. What is Embossing?
4. Write the use of chemical in anti-crease finishing?
5. Write five harmful chemicals in wet processing of textile?

**PART-B**

(4 X 8 = 32 marks)

**Answer any four questions from Q.No 6 to 10 in detail. Either A or B has to be answered in each question.**

6. A. Explain the printing of cotton with direct dye in direct style with recipes? (8)  
(OR)  
B. Write the role of chemicals used in printing (8)  
(a) Thickener (b) Alkali (c) Hygroscopic agent (d) Mild-oxidizing agent
7. A. Explain printing of silk with premetalised dye in direct style with printing recipe? (8)  
(OR)  
B. Explain the Batik technique and method? (8)
8. A. Explain the mechanical and chemical finishing with examples and also explain the temporary and permanent finishing with examples? (8)  
(OR)  
B. What is object of calendaring? Write types of calendaring and also explain felt calendaring with neat line diagram? (8)
9. A. Explain the fabric mercerization machine (anyone) with a neat line diagram? (8)  
(OR)  
B. Explain the water proofing and water repellency finishing process on cotton material. (8)
10. A. Explain in brief Eco-textile process? (8)  
(OR)  
B. How do you identify the Sulphur dyes and cationic dye? Explain in details. (8)

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Diploma in Handloom & Textile Technology

SEMESTER EXAMINATION-Nov/Dec-2021

(Regulation-2014)

Year / Semester: THIRD SEMESTER

Time: 90 minute

Subject Code & Name: 3.3 CHEMICAL PROCESSING OF TEXTILES-I

Max.Marks:40

## PART-A

(4×2=8 marks)

Answer any four questions. The answer shall be within 2 or 3 sentences:-Unit 1

1. Hydrogen peroxide is universal bleaching agent justify.
2. Give the names of any two water soluble dyes.
3. What is Icc Color? Write the name of coupling compound.
4. Write the chemical used for vatting?
5. Differentiate between M and H brand reactive dyes.

## PART-B

4 X 8 = 32 marks

Answer any four questions from Q.No 6 to 10 in detail. Either A or B has to be answered in each question.

6. A. Explain the various Desizing methods. (8)  
(OR)  
B. Explain the bleaching of cotton with  $H_2O_2$  and mention advantages over hypochlorite bleaching. (8)
7. A. Name various methods of Singeing process. Why gas singeing machine is most popular than other method and explain the working of gas singeing with diagram. (8)  
(OR)  
B. Explain in details the process of continuous desizing, souring and bleaching process in J-Box Machine with diagram. (8)
8. A. Define the % Shade, % Exhaustion, %Expression and M:L. (8)  
(OR)  
B. Describe the dyeing of Cotton with Azoic Colors. Mention the function of each chemicals used during dyeing (8)
9. A. Explain the Vatting process and details the application of "IN" class of vat dyes on cotton. (8)  
(OR)  
B. What is solubilized vat dye, explain the dyeing of cotton with solubilised vat dye and give the Advantages and disadvantages. (8)
10. A. Explain in detail the application of cold brand reactive dye on cotton materials and mention the functions of chemicals used in dyeing (8)  
(OR)  
B. Explain in detail the application of Hot brand reactive dye on cotton materials and mention the function of chemical used during dyeing. (8)

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Diploma in Handloom & Textile Technology

SEMESTER EXAMINATION-Nov/Dec-2021

(Regulation-2014)

Year / Semester: FIRST YEAR BACK PAPER

Time: 90 minute

Subject Code & Name: 1.3 APPLIED PHYSICS

Max.Marks:40

## PART-A

(4×2=8 marks)

Answer any four questions. The answer shall be within 2 or 3 sentences:-

1. Convert 36 km/Hr in to m/sec.
2. Define Boyle's Law.
3. Define the condition for total internal reflection.
4. State Kirchhoff's current law for electrical circuits.
5. Write truth table of 'OR' logical operation.

## PART-B

4 X 8 = 32 marks

Answer any four questions from Q.No 6 to 10 in detail. Either A or B has to be answered in each question.

6. A. Prove that  $s = ut + \frac{1}{2}at^2$  is dimensionally correct. (8)  
(OR)  
B. Prove by dimensional method 1 Joule =  $10^7$  ergs. (8)
7. A. The volume of a given mass of a gas at 27°C is 100cc. To what temperature should it be heated at the same pressure so that it will occupy a volume of 150cc? (8)  
(OR)  
B. Derive the ideal gas equation. (8)
8. A. Derive the formula for finding the Refractive index of the material of a prism using required diagrams. (8)  
(OR)  
B. Derive an expression for magnification in a simple microscope using a ray diagram. (8)
9. A. Derive the expression for equivalent resistance of a group of resistors connected in series. (8)  
(OR)  
B. Explain the application of Kirchhoff's law to Wheat stone's Bridge. (8)
10. A. Explain the working of a Half-Wave rectifier using P-N Junction Diode with diagram. (8)  
(OR)  
B. Describe the Construction and working of a P-N Junction diode. (8)

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Diploma in Handloom & Textile Technology  
**SEMESTER EXAMINATION – NOVEMBER / DECEMBER - 2021**  
(Regulation-2014)

Year / Semester : Fifth Semester  
Subject Code & Name : 5.4 – Principles of Textile Testing - I

Time : 90 Minutes  
Max. Marks:40

**PART-A**

**(4×2=8marks)**

Answer any four questions. The answer shall be within 2 or 3 sentences:-

1. Why testing of sample is preferred over population?
2. Why standard testing atmosphere is required to be maintained in textile testing laboratories?
3. What is universal yarn numbering system?
4. Write the relationship between twist per inch and twist multiplier in indirect yarn count system.
5. Write the formula to calculate the index of irregularity of yarn.

**PART-B**

**(4 X 8 = 32 marks)**

Answer any four questions from Q.No 6 to 10 in detail. Either A or B has to be answered in each question.

6. A) Calculate the Standard deviation and Coefficient of variation for the following values of cloth strength in pounds: (08)  
42, 39, 45, 47, 38, 39, 46, 44, 41, 37  
(OR)  
B) Define: (08)  
i) Mean ii) Median iii) Mode iv) Mean deviation v) Percentage Mean deviation  
vi) Bimodal distribution curve vii) Random Sample viii) Biased Sample
7. A) With schematic diagram, explain the working principle of wet and dry bulb hygrometer. (08)  
(OR)  
B) Explain the various factors affecting the moisture regain of a given fiber. (08)
8. A) With schematic diagram, explain the method for measurement of yarn count using wrap reel and weighing balance method. (08)  
(OR)  
B) With schematic diagram, explain the method of measurement of yarn count using quadrant balance. (08)
9. A) Explain the effect of twist on various fabric properties with suitable example. (08)  
(OR)  
B) With schematic diagram, explain the method for measurement of single yarn twist using twist contraction method. (08)
10. A) Explain the method of measurement of yarn irregularity using capacitance method. (08)  
(OR)  
B) With suitable sketch, explain the classification of yarn fault in Uster Classimat System. (08)

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Diploma in Handloom & Textile Technology

SEMESTER EXAMINATION-Nov/Dec-2021

(Regulation-2014)

Year / Semester: SIXTH SEMESTER

Time: 90 minute

Subject Code & Name: 6.4 PRINCIPLES OF TEXTILE TESTING-II

Max.Marks:40

## PART-A

(4×2=8 marks)

Answer any four questions. The answer shall be within 2 or 3 sentences:-

1. Define Elastic Recovery.
2. Define CSP.
3. With line diagram, show Pendulum lever principle.
4. Define Drape.
5. Define Quality Assurance.

## PART-B

4 X 8 = 32 marks

Answer any four questions from Q.No 6 to 10 in detail. Either A or B has to be answered in each question.

6. A. Draw the typical Load-Elongation curve of a textile material and briefly explain the following:  
(a) Yield point (b) Work of Rupture. (8)  
(OR)  
B. Discuss in detail about factors influencing yarn strength. (8)
7. A. Explain the method of measurement of yarn strength using Inclined Plane Principle (CRL). (8)  
(OR)  
B. With neat diagram, explain the working principle of Instron Tester. (8)
8. A. Explain the working principle of the Elmendorf tearing tester with suitable diagrams. (8)  
(OR)  
B. Discuss about Types of Abrasion and Testing of Abrasion Resistance. (8)
9. A. Explain the measurement of Crease recovery with suitable diagrams. (8)  
(OR)  
B. Explain the method of measuring fabric stiffness using Shirley Stiffness Tester with suitable diagrams. (8)
10. A. List the methods of fabric grading systems and explain with a suitable example, how to grade a finished woven fabric meant for export. (8)  
(OR)  
B. Discuss in details about TQM & Six Sigma. (8)

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Diploma in Handloom & Textile Technology

SEMESTER EXAMINATION-Nov/Dec-2021

(Regulation-2014)

Year / Semester: THIRD SEMESTER

Time: 90 minute

Subject Code & Name: 3.4 MATERIAL SCIENCE & ENGINEERING MECHANICS.

Max.Marks:40

## PART-A

(4×2=8 marks)

Answer any four questions. The answer shall be within 2 or 3 sentences:-

1. Write the four uses of timber.
2. State Lami's theorem.
3. State Hooke's law.
4. Name any four types of carpentry joints.
5. Define friction.

## PART-B

4 X 8 = 32 marks

Answer any four questions from Q.No 6 to 10 in detail. Either A or B has to be answered in each question.

6. A. Write down the physical properties of metal. (8)  
(OR)  
B. Briefly explain the defects of timber with neat diagram. (8)
7. A. A body thrown vertically upward with velocity 29.4 m/sec. Find time taken by body to reach its maximum height also find maximum height gained by the body. (8)  
(OR)  
B. State clearly Newton's three laws of motion with suitable example (8)
8. A. A mass 5 kg is initially at rest a force 20 N is applied on it, what is the kinetic energy at the end of 10<sup>th</sup> second. (8)  
(OR)  
B. An engine pumps 100 kg of water through a height 10m in 5 sec. If the efficiency of the engine is 60 %. What is the power of the engine? (8)
9. A. Explain arc welding process with neat sketch. (8)  
(OR)  
B. Sketch and outline diagram of drilling machine and explain its operation. (8)
10. A. Explain screw Jack with neat sketch. (8)  
(OR)  
B. A Pulley 2m in diameter running at 400rpm connected by means of open belt to another pulley of diameter 4 m. Calculate the speed of the pulley if belt thickness is 5 mm and total slip 4%. (8)

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Diploma in Handloom & Textile Technology

SEMESTER EXAMINATION-Nov/Dec-2021

(Regulation-2014)

Year / Semester: I Year

Time: 90 Minutes

Subject Code & Name: 1.4- Applied Chemistry

Max. Marks: 40

## PART-A

(4×2=8 marks)

Answer any four questions. The answer shall be within 2 or 3 sentences:-

- 1) What is hardness of water? How is it classified?
- 2) What is Glauber's salt?
- 3) What is the use of sodium formaldehyde sulfoxylate?
- 4) Write the structure of benzene and give any two properties.
- 5) Define polymerization.

## PART-B

(4 X 8 = 32 marks)

Answer any four questions from Q.No 6 to 10 in detail. Either A or B has to be answered in each question.

6) A) Define Zeolite. Describe the Zeolite process of water treatment. (8)

(Or)

B) Explain in detail about the general characteristic of catalyst. (8)

7) A) Describe the physical and chemical properties of sodium carbonate. (8)

(Or)

B) Describe the physical and chemical properties of sulphuric acid. (8)

8) A) Discuss in detail about the properties and uses of hydrogen peroxide. (8)

(Or)

B) Explain in details about the manufacture of Rongalite-C. (8)

9) A) Write the IUPAC name of following compounds.

i)  $C_6H_5NH_2$  ii)  $CH_4$  iii)  $C_2H_5OH$  iv)  $CH_3COOH$ . (8)

(Or)

B) Explain the physical and chemical properties of Naphthalene. (8)

10) A) Briefly explain the addition and condensation polymerisation reaction. (8)

(Or)

B) Discuss in detail about Glucose and Lactose. (8)

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VENKATAGIRI

Diploma in Handloom & Textile Technology

**SEMESTER EXAMINATION-Nov/Dec-2021**

(Regulation-2014)

Year / Semester: **3<sup>rd</sup> Year/ 5<sup>th</sup> Sem.**

Time: **90 Minutes**

Subject Code & Name: **5.5 Principle of Management and Entrepreneurship** Max.Marks:**40**

**PART-A**

**(4×2=8 marks)**

**Answer any four questions. The answer shall be within 2 or 3 sentences:-**

- 1) What is Handloom Mark?
- 2) When & why National Handloom Day is celebrated?
- 3) What is Geographical Indication (GI)? Mention four examples of textile product belongs to GI.
- 4) What is Market Sampling?
- 5) What is E-Commerce?

**PART-B**

**(4 X 8 = 32 marks)**

**Answer any four questions from Q.No 6 to 10 in detail. Either A or B has to be answered in each question.**

- 6) A. Explain in detail about the historical development of Handloom Industry.  
(Or)  
B. Explain the organizational structure of Handloom Industry with suitable hierarchical chart.
- 7) A. How value addition and product diversification will help to improve the condition of Handloom Sector?  
(Or)  
B. Explain the North Eastern Region Textile Promotion scheme with its components.
- 8) A. Explain in detail about the classification of market.  
(Or)  
B. What is Principles of Marketing? What are factors that are considered in Market Planning? Explain in detail.
- 9) A. Explain in details about the sources of data collection.  
(Or)  
B. Give detail explanation about the factors that influence the pricing decision.
- 10) A. How an entrepreneur plays an important role to build an economic condition of country?  
(Or)  
B. What is Entrepreneurship? Explain in detail the classification of Entrepreneur.

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Diploma in Handloom & Textile Technology

SEMESTER EXAMINATION-Nov/Dec-2021

(Regulation-2014)

Year / Semester: FIRST YEAR

Time: 90 Minutes

Subject Code & Name: 1.5 FIBRE & YARN TECHNOLOGY

Max. Marks: 40

**PART-A**

(2×4=8 marks)

**Answer any four questions. The answer shall be within 2 or 3 sentences:-**

1. List the objectives of blow room.
2. Give any two physical properties of viscose rayon.
3. Write down the principle of open end spinning.
4. Write down the two advantages of air jet spinning process.
5. What do you mean by course and wale?

**PART-B**

(4 x 8 = 32 marks)

**Answer any four questions from Q.No 6 to 10 in detail. Either A or B has to be answered in each question.**

6. A. Explain the operating principle of Carding machine with suitable diagram. (8)  
(OR)  
B. Define textile fiber. Draw the flow diagram showing the classification of textile fibers. (8)
7. A. Draw the flow charts for manufacturing of Viscose rayon and Polyester yarn. (8)  
(OR)  
B. Write down the physical and chemical properties of Nylon yarn. (8)
8. A. Explain the manufacturing of Silk yarn. (8)  
(OR)  
B. Describe the process of Reeling, Bundling and Baling. (8)
9. A. Explain the working of Air Jet spinning with suitable diagram. (8)  
(OR)  
B. i) State differences between Rotor spun and Ring spun yarn. (4)  
ii) Write the working principle of Friction spinning. (4)
10. A. Explain in detail about Garment manufacturing process. (8)  
(OR)  
B. i) Write short notes on Textured yarn. (4)  
ii) Explain briefly the manufacturing process of Tyre cord. (4)

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Diploma in Handloom & Textile Technology

SEMESTER EXAMINATION-Nov/Dec-2021

(Regulation-2014)

Year / Semester: **Fourth Semester**

Time: 90 Minutes

Subject Code & Name: **4.1 Weaving Technology & Textile Calculation- III**

Max.Marks: 40

**PART-A**

**(4×2=8 marks)**

**Answer any four questions. The answer shall be within 2 or 3 sentences:-**

- 1) Explain the principle of loose reed warp protection mechanism.
- 2) Define "bunch" in connection with cop changing mechanism.
- 3) The calculated rate of warping of a warper was found to be 4500 yards per hour. If the actual production per hour is 3064 yards. Calculate its efficiency.
- 4) Width of warp is required to be 40 inches .The number of sections in the warp is 8. Calculate the width of each section.
- 5) The calculated rate of winding of a super speed cone winding is 1100 metres per minute, if the efficiency is 70%. Calculate the actual length of yarn wound in kms. per day of 10 hours.

**PART-B**

**(4 X 8 = 32 marks)**

**Answer any four questions from Q.No 6 to 10 in detail. Either A or B has to be answered in each question.**

- 6) A. With the help of neat sketch, Explain the working of fast reed warp protection motions.  
(Or)  
B. Prepare a comprehensive lay out plan for a loom shed accommodating 50 power looms. Also mention the facilities which are necessary for the shed. (8)
- 7) A. With the help of simple line diagram, Explain the working principle of Eccles drop box motion in powerloom. (8)  
(Or)  
B. Explain the working principle of cop changing mechanism of an automatic loom with neat sketch. (8)
- 8) A. Calculate the time required to prepare a set of 8 warpers beam on a 2 improved high speed beam warpers with a warping speed of 560 yards (calculated) per minute. The length of warp on each beam is required to be 36000 yards. The overall efficiency of the warping machines is 80 %. (8)  
(Or)  
B. A super speed beam warper with a warping speed of 880 yards per minute is preparing a standard warp of 525 ends. If the count of the yarn is 30<sup>s</sup> cotton and the overall efficiency is 84%. The length of warp on each beam is required to be 44352 yards. Calculate the following. (8)  
(1) Total length of warp produced per day of 8 hours.  
(2) Number of beams produced per day of 8 hours.

- 9) A. The calculated production of a high speed slasher is 120 yards per minute, if the efficiency of the machine is 80%. Calculate (1) the actual production per day of 8 hours. (2) the total length of warp yarn, if the total ends are 3200.

(Or)

- B. A stripe warp of the following particulars is to be made on a sectional warping machine.
- Total ends – 2240
- Number of ends per pattern - 32
- Number of extra pattern ends at both ends near selvages has- 24
- Total selvedge ends at each side- 20
- If the creel capacity is 480 bobbins and the width of warp in reed is 35 inches, calculate the following:
- Number of complete patterns in warp
  - Number of sections to be made
  - Number of ends per section

- 10) A. Calculate the average reed space of the looms in a weaving shed containing 320 looms of the following particulars:

Size of looms (reed space)	Number of looms
90cms	80
120cms	40
100cms	120
150cms	80

(Or)

- B. Calculate the time required for winding 3000 hanks of 12<sup>S</sup> cotton yarn from hanks on a high speed automatic pirn winder with 8 spindles. The calculated rate of winding per minute is 420 yards. Assume that the efficiency is 80%.

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Diploma in Handloom & Textile Technology

SEMESTER EXAMINATION-Nov/Dec-2021

(Regulation-2014)

Year / Semester: 4<sup>th</sup> Semester

Time: 90 minute

Subject Code & Name: 4.2 Fabric Structure-III

Max.Marks:40

## PART-A

(4×2=8 marks)

Answer any four questions. The answer shall be within 2 or 3 sentences:-

1. Why the terry pile fabrics are suitable for toweling purposes?
2. Name the two series of warp threads used for constructing warp backed cloths.
3. Mention the objects of using wadding threads in backed cloths.
4. Mention the different operations required in producing chenille fabrics.
5. Write the names of warp series required for the weaving of velvet fabrics.

## PART-B

4 X 8 = 32marks

Answer any four questions from Q.No 6 to 10 in detail. Either A or B has to be answered in each question.

6. A. Explain the different stages of making treble cloth design using 2/2 twill for each layer. (8)  
(OR)  
B. Draw the design of treble cloth using 3/3 twill for each layer with suitable stitching. (8)
7. A. Draw warp backed weft wadded weave on 16x16. (8)  
(OR)  
B. Indicate the two modifications of 3 and 3 twill into Imitation weft backing. (8)
8. A. Draw the check effect in terry pile fabric. (8)  
(OR)  
B. Construct terry pile weave to form stripe effect with two colour piles on both sides. (8)
9. A. Explain the production technique of warp pile fabric with the aid of wire. (8)  
(OR)  
B. Explain the warp pile fabric production using simultaneous insertion of pick and wire technique with a neat diagram. (8)
10. A. Explain the production method of chenille pile fabrics by using two looms. (8)  
(OR)  
B. Explain the differences between plain back velveteen and corduroy with suitable example. (8)

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Diploma in Handloom & Textile Technology

SEMESTER EXAMINATION-Nov/Dec-2021

(Regulation-2014)

Year / Semester: I Year Back Paper

Time: 90 Minutes

Subject Code & Name: 1.6 WEAVING TECHNOLOGY & TEXTILE CALCULATIONS – I Max.Marks: 40

**PART-A**

(4×2=8 marks)

Answer any four questions. The answer shall be within 2 or 3 sentences:-

- 1) Write down the objectives of Pirn winding .
- 2) Mention the various types of healds used in the weaving industry.
- 3) List out the types of shuttle used in handloom.
- 4) Define the term count in N. E. system.
- 5) Convert 20<sup>s</sup> worsted count into Ne cotton.

**PART-B**

(4 X 8 = 32 marks)

Answer any four questions from Q.No 6 to 10 in detail. Either A or B has to be answered in each question.

- 6) A. Explain the methods of preparing warp using vertical warping machine. (8)  
(Or)  
B. With suitable example, explain the various ingredients used in preparation of size mixture. (8)
- 7) A. With suitable diagram, explain the passage of warp yarn in fly shuttle frame loom. (8)  
(Or)  
B. Explain different types of sheds with line diagram. (8)
- 8) A. What are the different types of take-up motion used in handloom, describe any one take-up motion with suitable diagram. (8)  
(Or)  
B. Explain in detail about auxiliary motion of handloom. (8)
- 9) A. (i) If 1450 metres of silk yarn whose weight is 8 gms. What is the count of yarn in Denier Metric system? (4)  
(ii) Find out the length of 650 gms. of Nylon yarn, whose count is 20 tex. (4)  
(Or)  
B. Calculate the weight in grams of a bunch of cotton having one hank of 20<sup>s</sup> one hank of 30<sup>s</sup> and one hank of 40<sup>s</sup> cotton. (8)
- 10) A. Derive the conversion factor for converting count from Tex system to Denier metric system. (8)  
(Or)  
B. Derive the conversion factor for converting Ne cotton count to Linen system. (8)



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Diploma in Handloom & Textile Technology

**SEMESTER EXAMINATION-Nov/Dec-2021**

(Regulation-2014)

Year / Semester: IV

Time: 90 Minutes

Subject Code & Name: 4.3 CHEMICAL PROCESSING OF TEXTILES-II

Max.Marks:40 Marks

**PART-A**

**(4×2=8 marks)**

**Answer any four questions. The answer shall be within 2 or 3 sentences:-**

- 1) Why degumming of silk is required?
- 2) What do you mean by stoving of wool?
- 3) What is 1:2 metal complex dye?
- 4) What is the working principle of the winch dyeing machine?
- 5) Write the name of two synthetic mordants used in the natural dyeing method.

**PART-B**

**(4 X 8 = 32 marks)**

**Answer any four questions from Q.No 6 to 10 in detail. Either A or B has to be answered in each question.**

- 6) A. Explain in detail the suitable method of degumming of silk material.

**(Or)**

B. Explain the scouring process of woollen fabric with a suitable diagram.

- 7) A. Explain the bleaching of wool with Hydrogen Peroxide and write the function of chemicals used.

**(Or)**

B. Describe the process of bleaching for polyester fabric mention the recipe and objectives of chemicals used.

- 8) A. Explain the dyeing of wool with 1:1 metal complex dyes, write the recipe, method and objectives of chemical used.

**(Or)**

B. Explain the dyeing of silk with reactive dyes along with their recipe and function of each chemical used for dyeing.

- 9) A. Explain the working of Jigger Dyeing Machine with neat diagram.

**(Or)**

B. Define percentage expression and explain the working of two bowl padding mangles.

- 10) A. Classify the vegetable dyes according to their source and write about the advantages of using natural dyes.

**(Or)**

B. Explain the various fastness properties of dyed material in detail.

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Diploma in Handloom & Textile Technology

SEMESTER EXAMINATION-Nov/Dec-2021

(Regulation-2014)

Year / Semester: FORTH SEMESTER (BACK PAPER)

Time: 90 Minutes

Subject Code & Name: 4.4 ECOLOGY AND POLLUTION CONTROL IN TEXTILE INDUSTRY

Max.Marks:40

## PART-A

(4×2=8 marks)

Answer any four questions. The answer shall be within 2 or 3 sentences:-

1. What is Secondary pollutant?
2. Give the sources of air pollution in textile mill
3. What is effluent?
4. What is coagulating agent? Give an example
5. What is Eco labeling?

## PART-B

4 X 8 = 32 marks

Answer any four questions from Q.No 6 to 10 in detail. Either A or B has to be answered in each question.

6. A. Explain Greenhouse effects and its consequences? (8)  
(OR)  
B. Explain the Global warming and its consequences. (8)
7. A. Explain causes of air pollution and its remedies. (8)  
(OR)  
B. Explain air quality standards in details. (8)
8. A. Give the various sources of waste water in wet processing. (8)  
(OR)  
B. Give the characteristics of waste water from Textile industries. (8)
9. A. Explain the impact of water pollution on man and ecology of Textiles. (8)  
(OR)  
B. Explain the design and working of effluent treatment plant in details. (8)
10. A. Explain the sources and effects of noise pollution. (8)  
(OR)  
B. Discuss the new challenges towards achievements of rigid standards in Textile Industries. (8)

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Diploma in Handloom & Textile Technology

SEMESTER EXAMINATION-Nov/Dec-2021

(Regulation-2014)

Year / Semester: FIRST YEAR

Time: 90 minute

Subject Code & Name: 1.7 FABRIC STRUCTURE-I

Max.Marks:40

## PART-A

(4×2=8 marks)

Answer any four questions. The answer shall be within 2 or 3 sentences:-

1. How many minimum ends and picks are required to construct a plain weave?
2. Name any two types of drafting orders.
3. Name possible moves for constructing 5 ends satin.
4. Name two suitable weaves for towel manufacturing.
5. What is bird's eye effect?

## PART-B

4 X 8 = 32 marks

Answer any four questions from Q.No 6 to 10 in detail. Either A or B has to be answered in each question.

6. A. Explain different methods of ornamentation of plain weave. (8)  
(OR)  
B. Construct 2x4 regular and irregular warp rib and 4x4 mat weaves. (8)
7. A. Construct 8x4 herringbone twill weave with drafting order. (8)  
(OR)  
B. Construct 4x4 twill for warp face, weft face and equal face weaves with drafting order. (8)
8. A. Construct twill dice check with drafting and peg plan on 12 ends and 12 picks. (8)  
(OR)  
B. Construct irregular sateen weave on 4 and 6 threads with drafting order. (8)
9. A. Construct honey comb weave on 6 x 6 with drafting and peg plan. (8)  
(OR)  
B. Construct huck a back design on 10 x 10 with drafting and peg plan. (8)
10. A. Construct cork screw weave on 7 x 7 with drafting and peg plan. (8)  
(OR)  
B. Construct colour and weave effect to produce hound's tooth effect. (8)

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Diploma in Handloom & Textile Technology

**SEMESTER EXAMINATION - NOV/DEC-2021**

(Regulation-2014)

Year / Semester : IV Semester

Time:90 Minutes

Subject Code & Name : 4.5 Professional Ethics & Personality  
Development

Maximum Marks: 40

**PART-A**

**(4×2=8 marks)**

**Answer any four questions. The answer shall be within 2 or 3 sentences:-**

- 1 . Define profession & Professional? 2
- 2 . Explain the meaning of the term “work place spirituality”. 2
- 3 . What is the meaning of safety and risk assessment? 2
- 4 . What is self-confidence? 2
- 5 . Define Communication? 2

**PART-B**

**( 4X 8 = 32 marks)**

**Answer any four questions from Q.No 6 to 10 in detail. Either A or B has to be answered in each question.**

6. A. Explain 6 characteristics that a professional must possess in order to be successful. (8)  
(OR)  
B. What is ethics? Explain different types of Ethics. (8)
7. A. What is moral dilemma? Explain in detail with one example. (8)  
(OR)  
B. Explain ten basic qualities one must develop in all spheres in one's personality. (8)
8. A. Explain specific ways in which engineering societies can promote ethics (8)  
(OR)  
B. Explain Carol Gilligan’s moral development theory. (8)
9. A. Can attitude be changed? Explain (8)  
(OR)  
C. Explain the steps that one can take to achieve Self-Development (8)
10. A. Explain some important nonverbal clues that one can send across in the communication process. (8)  
(OR)  
B. What is the meaning of term culture in work environment and explain the seven central concept of culture? (8)

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