

Registration Number

--	--	--	--	--	--	--	--

INDIAN INSTITUTE OF HANDLOOM TECHNOLOGY

Bargarh/Fulia/Guwahati/Jodhpur/Salem/Varanasi/Champa/Kannur/KHTI-Gadag/SPKM-Venkatagiri

Diploma in Handloom & Textile Technology

APRIL/MAY-2024 SEMESTER EXAMINATION

(Regulation-2021)

Semester : 04

Time:3 Hours

Course Code & Title : **HTPC209 Weaving Technology - I**

Maximum Marks: 100

PART-A

(10×2=20 Marks)

Answer all the questions within two to three sentences

1. What are the objectives of tensioning device in winding machine?
2. State the advantages of splicing process over knotting process.
3. Write the formula to calculate the number of sections required to be made in sectional warping machine.
4. Write the formula to calculate the size pick up percentage.
5. Enlist the various auxiliary motions in weaving process.
6. Write the advantages of early picking.
7. What is sley eccentricity?
8. Differentiate loose reed and fast reed motions.
9. What is the purpose of employing drop box motion in power loom?
10. Write the formula to enumerate the length of fabric delivered in inches per minute in powerloom.

PART-B

((6+10)×5=80 Marks)

Answer all the questions in detail

11. A. Differentiate the precision winding process and drum winding process. (6)
B. With line diagram, explain any one type of electronic yarn clearer mechanism with its advantages and disadvantages. (10)
- (OR)
- C. Write briefly about the anti-ribboning device employed in winding machines. (6)
D. Calculate the number of drums required to wind 900 pounds of cotton yarn of 32 Ne in 8 hours. The actual rate of winding is 1080 yards per minute. (10)
12. A. Draw the line diagram of modern warping machine and indicate the important functional parts. (6)

- B. With line diagram, explain the working principle of multi cylinder sizing machine. (10)

(OR)

- C. Calculate the number of sections to be made and number of ends in each section to be split for uniform distribution, if the total number of ends required to be in the warp sheet is 2700 and the maximum creel capacity is 500 bobbins. (6)

- D. The speed of the warp drum is 45 and its diameter is 20 inches. What is the length of warp delivered in hanks per warper per day of 8 hours, if the efficiency of the machine is 65% (10)

13. A. Explain about the early shedding and late shedding with their advantages and disadvantages. (6)

- B. Explain the working mechanism of climax dobby with suitable diagram. (10)

(OR)

- C. Differentiate early shedding and late shedding. (6)

- D. Explain the working mechanism of cone over pick with suitable diagram. (10)
Also explain about the various settings to be altered to change the picking force.

14. A. Write the advantages and disadvantages of negative let-off motions. (6)

- B. Explain the loom timing diagram by indicating the timings of the all primary motions and their synchronization. (10)

(OR)

- C. Discuss in brief about the various temples used in weaving process. (6)

- D. With neat sketch, explain the working of center weft fork motions. (10)

15. A. Explain about the drop wires used in mechanical warp stop motion. (6)

- B. With neat sketch, explain the working of any one type of multiple drop box motion. (10)

(OR)

- C. Prepare a lay-out for a loom shed suitable for accommodating 25 powerloom. (6)

- D. Explain the working principle of shuttle changing mechanism with its advantages and disadvantages. (10)

Registration Number

--	--	--	--	--	--	--	--

INDIAN INSTITUTE OF HANDLOOM TECHNOLOGY

Bargarh/Fulia/Guwahati/Jodhpur/Salem/Varanasi/Champa/Kannur/KHTI-Gadag/SPKM-Venkatagiri

Diploma in Handloom & Textile Technology

APRIL/MAY-2024 SEMESTER EXAMINATION

(Regulation-2021)

Semester : 04

Time:3 Hours

Course Code &Title : **HTPC210 Fabric Structure - II**

Maximum Marks:100

PART-A

(10×2=20 Marks)

Answer all the questions within two to three sentences

- 1 . What are the main characteristics of bed ford cord weave?
- 2 . How many series of warp threads are required to produce welt structure and why?
- 3 . Write the stitching method followed in warp centre stitched double cloth?
- 4 . Draw the line diagram of a thread interchanging double cloth?
- 5 . What are the objectives of producing treble cloth?
- 6 . Which type of backed cloth can be produced economically & why?
- 7 . What is face to face weaving technique?
- 8 . What is anchoring of piles & name the main two ways of anchoring of piles?
- 9 . Indicate lifting plan for cross shed in cross weaving using bottom loop.
- 10 . Name the factors that influence the selection of proper count of graph paper?

PART-B

((6+10)×5=80 Marks)

Answer all the questions in detail

11. A. Construct the design & draft of a 2/2 twill face bed ford cord weave. (6)
- B. Construct the design, draft & interlacement diagram of a wadded plain face Bedford cord repeats on (14 x 4), taking 2 wadding threads in a repeat. (10)
- (OR)
- C. Differentiate between Bedford cord & welt structure. (6)
- D. Construct the design, draft & interlacement diagram of a fast back welt structure repeats on (6 x 8), keeping the 3rd, 4th as wadding picks in a repeat. (10)
12. A. Differentiate double width cloth, tubular cloth & two ply cloth. (6)
- B. Construct a self stitched double cloth design by taking face weave as 2/4 twill weave & back weave as 3/3 twill weave using any one stitching method. (10)

(OR)

- C. Construct a weft center stitched double cloth design by taking 2/2 twill weave as face & back weave. (6)
- D. With proper illustration, showing the stripe effects produced in both thread interchanging double cloth & cloth interchanging double cloth. (10)
13. A. Construct a reversible warp backed cloth design using 3/1 twill weave. (6)
- B. Construct a warp wadded weft backed cloth by taking 5 thread satin/sateen weave on face & back by taking warp : wadding warp = 1 : 1 & Face pick : Back pick = 1:1. (10)
- (OR)**
- C. Construct a design of a 2/2 twill imitation warp backed on 9 end and 9 picks. (6)
- D. Construct a treble cloth design by using 3/3 twill weave on face, center & back weave. Mention the stitching methods followed. (10)
14. A. Write the salient features of terry piles. (6)
- B. Construct the design and interlacement diagram of the followings (10)
- i) 3 pick terry pile produced both sides
- ii) 5 pick terry pile produced on face side only
- (OR)**
- C. Construct one repeat of twill back velveteen by taking Ground weave – 2/1 twill, pile weave – 1/2 twill & Ground : pile pick = 1 : 3 (6)
- D. Explain the method of production of warp pile fabrics with aid of wires and taking a suitable example, construct a design and interlacement diagram. (10)
15. A. Draw the neat diagram showing the formation of open shed formed in leno weaving. (6)
- B. Taking 36 ends and 36 picks indicate the structure of a figured single cloth using any two weave for straight tie and straight draft arrangement. (10)
- (OR)**
- C. Differentiate extra warp and extra weft design. (6)
- D. Take a motif of 10 X 10 for extra weft figure, the complete structure in 10 ends & 20 picks in the graph paper, keeping the proportion of ground to extra weft 1: 1 & plain weave for ground. (10)

Registration Number

--	--	--	--	--	--	--	--

INDIAN INSTITUTE OF HANDLOOM TECHNOLOGY

Bargarh/Fulia/Guwahati/Jodhpur/Salem/Varanasi/Champa/Kannur/KHTI-Gadag/SPKM-Venkatagiri

Diploma in Handloom & Textile Technology

APRIL/MAY-2024 SEMESTER EXAMINATION

(Regulation-2021)

Semester : 04

Time:3 Hours

Course Code &Title : **HTPC211 Chemical Processing of
Textiles - II**

Maximum Marks:100

PART-A

(10×2=20 Marks)

Answer all the questions within two to three sentences

1. What is the object of Heat Setting?
2. Give examples of carriers used in dyeing.
3. Write the name of traditional styles of printing.
4. Write the curing after treatment of printing.
5. What are the various styles of printing?
6. Write the recipe for printing of cotton with reactive dyes.
7. What is raising treatment in finishing?
8. Write a note on sueding treatment.
9. Write about mechanism of creasing.
10. What are the chemicals used to impart crease recovery finish in cotton?

PART-B

((6+10)×5=80 Marks)

Answer all the questions in detail

11. A. Write about moiré defect. (6)
B. Explain the dyeing of polyester with disperse dyes by thermosol method with neat diagram. (10)
- (OR)
- C. Describe carrier method of dyeing polyester with disperse dyes. (6)
D. Write the method of scouring polyester. Explain the bleaching of polyester with sodium chlorite. (10)
12. A. Explain ageing and steaming after treatments of printing. (6)
B. Describe the various printing paste ingredients and their function. (10)

(OR)

- C. Explain kalamkari, tie & dye and batik styles of printing. (6)
- D. Explain the rotary screen printing method with its advantages over other printing methods. What are the merits and demerits of transfer printing? (10)
13. A. Differentiate between dyes and pigments. (6)
- B. Explain the method of printing of cotton with direct dyes in direct style with recipe and after treatments. (10)
- (OR)**
- C. Write the method of printing of silk with acid dyes. (6)
- D. Describe the method of printing of polyester by disperse dyes with recipe and after treatments. (10)
14. A. What are the objects of textile finishing? (6)
- B. Explain the sanforizing process with neat diagram of machine used. (10)
- (OR)**
- C. Classify the mechanical and chemical finishes. What are the temporary and permanent finishes? (6)
- D. What are the objects of calendaring? Explain friction calendaring with neat diagram of machine used. (10)
15. A. Write difference between water proof and water repellency with examples of finishes used. (6)
- B. What is crease recovery finish for cotton? Write the process and recipe of wrinkle resistant finish on cotton. (10)
- (OR)**
- C. Explain soil release finish with mechanism of soiling. (6)
- D. Explain softening, stiffening, antistatic and flame retardant finishing on cotton fabric. (10)

Registration Number

--	--	--	--	--	--	--

INDIAN INSTITUTE OF HANDLOOM TECHNOLOGY

Bargarh/Fulia/Guwahati/Jodhpur/Salem/Varanasi/Champa/Kannur/KHTI-Gadag/SPKM-Venkatagiri

Diploma in Handloom & Textile Technology

APRIL/MAY-2024 SEMESTER EXAMINATION

(Regulation-2021)

Semester : 04

Time:3 Hours

Course Code & Title : **HTPC212 Textile Testing - I**

Maximum Marks: 100

PART-A

(10×2=20 Marks)

Answer all the questions within two to three sentences

1. What is meant by random sample?
2. List the process of Squaring technique for fibre sampling.
3. List the importance of the conditioning of sampling before testing?
4. Define relation humidity.
5. How the fibre fineness is termed? and what is the importance of it.
6. What is the maturity ration?
7. What is CRL?
8. List the factors affecting the result of a Single yarn strength tester.
9. Give the significance of the yarn Twist.
10. List out the count measuring systems.

PART-B

((6+10)×5=80 Marks)

Answer all the questions in detail

11. A. Explain the importance of testing on Textiles. (6)
B. Elaborate the selection of fibre samples using Squaring and Zoning Techniques with suitable examples. (10)
- (OR)
- C. Differentiate the random sampling and Bias sampling technique with suitable example. (6)
D. What kind of sampling technique used for selection of silk fibre. Explain the technique in detail. (10)
12. A. What is RH%?. Give the process of identifying the RH parameters using Hygrometer. (6)
B. Discuss the importance of atmospheric condition on textile testing and explain the effect of moisture on textile materials. (10)

(OR)

- C. Explain the relationship between the Moisture Content and Moisture Regain. (6)
- D. Discuss in detail any two methods of identifying the moisture regain properties of cotton fibre. (10)
13. A. What is spinnability of Fibres?. What are all the basic requirements and properties for a fibre to be spinnable?. (6)
- B. Explain in detail the measurement of fibre length and its distribution using Baer sorter. (10)
- (OR)**
- C. Elaborate the method of identifying the maturity of cotton fibre. (6)
- D. How does the fineness supports in yarn parameters?. Explain with neat diagram the measurement of fibre fineness using any one fineness tester. (10)
14. A. Discuss on CRE, CRT and CRL principles and give the type of tensile testing instruments working on the principles. (6)
- B. Evaluate the fibre strength using Stelometer and explain the working of Stelometer with neat diagram. (10)
- (OR)**
- C. List the parameters and factors influencing the results of the tensile properties of textile fibres and yarns. (6)
- D. Explain with neat sketch the construction and working principle of a Lea strength tester. (10)
15. A. Differentiate the term twist factor and twist multiplier with example. (6)
- B. Explain the method of measurement of yarn count using Beesley's balance along with its merits and demerits. (10)
- (OR)**
- C. Discuss the relationship of the following. (6)
- a) Twist and yarn strength b) Twist and fabric properties
- D. Explain the method of measuring the evenness of the yarn and discuss the different classification of yarn faults. (10)

Registration Number

--	--	--	--	--	--	--	--

INDIAN INSTITUTE OF HANDLOOM TECHNOLOGY

Bargarh/Fulia/Guwahati/Jodhpur/Salem/Varanasi/Champa/Kannur/KHTI-Gadag/SPKM-Venkatagiri

Diploma in Handloom & Textile Technology

APRIL/MAY-2024 SEMESTER EXAMINATION

(Regulation-2021)

Semester : 04

Time:3 Hours

Course Code &Title : **HTPE202 Garment Manufacturing
Technology**

Maximum Marks:100

PART-A

(10×2=20 Marks)

Answer all the questions within two to three sentences

1. Define the term Garment Manufacturing Technology.
2. List out the various departments in an apparel industry.
3. Write the formula of marker efficiency.
4. List out the important pattern making tools.
5. Mention the different types of cutting machine.
6. State the common defect in spreading.
7. List the types of seams.
8. Mention the basic parts of sewing machine.
9. What is bartack?.
10. Mention the different types of specialized sewing machine.

PART-B

((6+10)×5=80 Marks)

Answer all the questions in detail

11. A. Write the status of apparel industry in India. (6)
B. Briefly Explain the various departments in garment industry. (10)
(OR)
C. With the help of flowchart classify and explain the different types of garments. (6)
D. Briefly explain the different types of fabric and state their functional properties. (10)
12. A. Define the term Anthropometry and state the sequence of taking body measurements. (6)

- B. Explain different type of pattern making tools and their applications. (10)
- (OR)**
- C. Explain various types of pattern making. (6)
- D. Briefly explain eight head theory of Anthropometry. (10)
13. A. Define the term Spreading and briefly explain various methods of spreading. (6)
- B. Briefly explain the working principle of computerized cutting machine, State the advantages and disadvantages. (10)
- (OR)**
- C. State the objectives of cutting and describe requirements of cutting. (6)
- D. Briefly explain the working principle of Straight knife cutting machine and state the advantages. (10)
14. A. Define the term Stitching and classify the Stitching types. (6)
- B. Briefly explain the role of trims and accessories with respect to their applications. (10)
- (OR)**
- C. Briefly explain the functions of various parts of sewing machine. (6)
- D. Describe in detail about superimposed seam and bound seam. (10)
15. A. Define the term sewing. Classify the sewing machine based on their application. (6)
- B. Describe the importance of Special purpose sewing machines in an apparel industry. (10)
- (OR)**
- C. Explain the following. (6)
- a) Sewing needle b) Sewing thread.
- D. With a neat line diagram explain the process of stitch formation on Single needle lock stitch machine. (10)

Registration Number

--	--	--	--	--	--	--

INDIAN INSTITUTE OF HANDLOOM TECHNOLOGY

Bargarh/Fulia/Guwahati/Jodhpur/Salem/Varanasi/Champa/Kannur/KHTI-Gadag/SPKM-Venkatagiri

Diploma in Handloom & Textile Technology

APRIL/MAY-2024 SEMESTER EXAMINATION

(Regulation-2021)

Semester : 04

Time:3 Hours

Course Code &Title : **HTPE203 Nonwoven Technology**

Maximum Marks:100

PART-A

(10×2=20 Marks)

Answer all the questions within two to three sentences

- 1 . Differentiate nonwovens with other basic fabric structures.
- 2 . Name any two fibres preferred for polymer laid nonwoven process.
- 3 . List the limitations of parallel laid web formation systems.
- 4 . State the advantages of air-laying process.
- 5 . What is meant by punch density of needle punching process?
- 6 . State the principle of stitch-bonded nonwoven techniques.
- 7 . List the properties of Spunbond nonwovens.
- 8 . Give the polymers that can be used for meltblown nonwoven process.
- 9 . State any four mechanical finishing techniques for nonwovens.
- 10 . Which type of finishing technique is used to improve the dimensional stability of nonwoven fabric?

PART-B

((6+10)×5=80 Marks)

Answer all the questions in detail

11. A. Give the classification of nonwoven based on production techniques and structures. (6)
 - B. Give a detailed note on application of nonwoven in different areas. (10)
 - (OR)
 - C. Discuss the steps involved in preparation of fibres for the production of nonwoven fabric. (6)
 - D. Explain the characterisation of various nonwoven produced from different techniques. (10)
12. A. Compare parallel and cross-laid webs with respect to principle of web formation, limitations and characteristics of webs. (6)

- B. Describe the working principle of cross lapper with sketch and also mention the characteristics of the webs. (10)

(OR)

- C. Give a brief note on influence of web laying methods on nonwoven fabric properties. (6)
- D. Describe the principle and features of air laid web formation method with diagram. (10)

13. A. Give a brief note on manufacturing of calendar thermal-bonded fabric. (6)
- B. Describe the hot air oven thermal bonding method with suitable diagram. (10)

(OR)

- C. Discuss the types of needles used for bonding and structuring of nonwovens in needle punching. (6)
- D. Explain the formation of stitch bonded nonwovens systems with sketch. (10)

14. A. Compare spun bond and melt blown process. (6)
- B. With suitable diagram, explain the nonwoven manufacturing process for spun bonded nonwoven fabric. (10)

(OR)

- C. Give a brief note on special features of meltblown & spunbond nonwoven. (6)
- D. Elaborate the requirement and purpose of various components of meltblowing process with suitable sketches. (10)

15. A. Discuss in detail, the various application methods used for chemical finishing of nonwovens. (6)
- B. List the any five types of mechanical finishing of nonwoven and explain its influences on the properties of nonwovens. (10)

(OR)

- C. Describe the various parameters need to be tested for nonwoven fabrics meant for any two applications (6)
- D. Elaborate the techniques used to evaluate the quality of nonwovens for geo-textile applications. (10)
