

Registration Number

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**INDIAN INSTITUTE OF HANDLOOM TECHNOLOGY**

Varanasi

Post Diploma in Textile Processing

**APR/MAY-2025 SEMESTER EXAMINATION**

(Regulation-2021)

Semester : I

Time:3 Hours

Course Code & Title : **PDTP101 Fibre science**

Maximum Marks: 100

**PART-A**

(10×2=20 Marks)

**Answer all the questions within two to three sentences**

1. Differentiate branch and linear polymers.
2. Identify the importance of glass transition and melting temperature of polymers.
3. Find the reasons for selecting the solution spinning for producing fibres.
4. List any two fibers that produced from dry and melt spinning.
5. Illustrate the morphological structure of silk fibre.
6. Write the mechanism to form hydrocellulose fibre.
7. List the chemical properties of lyocell fibre.
8. Indicate the importance of heat setting process of fibre.
9. Enlist the monomers used for manufacturing of acrylic fibre.
10. Highlight the chemical properties of polyethylene fibre.

**PART-B**

((6+10) ×5=80 Marks)

**Answer all the questions in detail**

11. A. Highlight the important essential characteristics required for fibre formation. (6)  
B. Classify the natural and synthetic fibre with suitable chart. (10)
- (OR)**
- C. Define the following terms: Atactic polymer, Homo polymer, Crystallinity region (6)
  - D. Compare the mechanism of addition and condensation polymerisation with suitable examples. (10)
12. A. Identify the important component and their functions used in melt spinning. (6)  
B. Compare the working principles of dry and wet spinning. (10)

(OR)

C. Classify different types of textured yarn. (6)

D. Explain in detail about the application techniques of spin finish treatment. (10)

13. A. Compare the chemical properties of cotton and silk fibre. (6)

B. Analyse in detail about the morphological structure and physical properties of wool fibre. (10)

(OR)

C. Highlight about the concept of zwitter ion and isoelectric region in protein fiber. (6)

D. Demonstrate the morphological structure arrangement and their influence on physical properties of cotton fibre. (10)

14. A. Write the details about the production process of acetate rayon fibre. (6)

B. Create a table to compare the physical and chemical properties of viscose rayon and polyester fibre. (10)

(OR)

C. Enumerate different types of heat setting process. (6)

D. Compare the various route of production of polyester fibre. (10)

15. A. Explain the manufacturing process of Nylon 66 fibres. (6)

B. Compare and contrast the physical and chemical properties of Nylon 6 and 66 fibres. (10)

(OR)

C. Highlight the important physical properties of acrylic and polyethylene fibre. (6)

D. Discuss in detail about the production of polypropylene fibre. (10)

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Post Diploma in Textile Processing

**APR/MAY-2025 SEMESTER EXAMINATION**

(Regulation-2021)

Semester : I

Time:3 Hours

Course Code &Title : **PDTP102 Technology of Preparatory  
Process of Textiles**

Maximum Marks:100

**PART-A**

(10×2=20 Marks)

**Answer all the questions within two to three sentences**

1. Define singeing in textile processing.
2. Name two chemicals used for bleaching cotton.
3. List the major components of raw wool.
4. State the purpose of silk degumming.
5. Justify the need of pretreatment for synthetic fibres.
6. Mention about potting in wool processing.
7. State the functions of a scutcher in textile processing.
8. Define hydro extractor in textile wet processing.
9. List the function of wetting agents in preparatory processes.
10. Name two common defects caused during singeing.

**PART-B**

((6+10) ×5=80 Marks)

**Answer all the questions in detail**

11. A. Explain the morphological and chemical aspects of cotton. (6)  
B. Describe the importance of grey goods preparation before dyeing and printing. (10)
- (OR)
- C. Discuss the dry preparatory processes of cotton fabric in detail. (6)  
D. Explain different bleaching methods used for cotton fabrics with their advantages and disadvantages. (10)
12. A. Explain the morphological and chemical composition of silk. (6)  
B. Discuss different methods of wool scouring with their advantages and limitations. (10)

(OR)

- C. Explain the milling process in wool and its significance. (6)
- D. Describe various methods of degumming silk and compare them. (10)
13. A. Describe the bleaching process of wool using hydrogen peroxide. (6)
- B. Explain the scouring and bleaching methods for polyester and nylon. (10)
- (OR)**
- C. Explain the different setting processes for woolen materials. (6)
- D. Compare the pretreatment processes of protein and synthetic fibres. (10)
14. A. Describe the working principle of a singeing machine. (6)
- B. Explain the preparatory process sequence for different cotton materials. (10)
- (OR)**
- C. Describe the working principle and application of a winch machine in the textile industry. (6)
- D. Write a detailed note on the preparatory process of white, dyed, and printed cotton materials. (10)
15. A. Explain the working principle of a continuous bleaching. (6)
- B. Describe the function and working mechanism of a garment washing machine. (10)
- (OR)**
- C. Describe various defects caused in singeing and how they can be prevented. (6)
- D. Explain the various chemical and auxiliaries used in preparatory processing of textile materials and their importance. (10)

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**APR/MAY-2025 SEMESTER EXAMINATION**

(Regulation-2021)

Semester : I

Time:3 Hours

Course Code &Title : **PDTP103 Technology of Dyeing-I**

Maximum Marks:100

**PART-A**

(10×2=20 Marks)

**Answer all the questions within two to three sentences**

1. Compare dyes and pigments.
2. What is meant by percentage of shade?
3. Write shortly about the method of application of Sulphur dyes.
4. List the chemicals used in the process of dyeing cotton with Azoic dyes.
5. State the textile materials that can be dyed with the Vat dyes.
6. Classify Reactive dyes.
7. State the structural concept of wool and silk.
8. Distinguish between Acid dye and Metal Complex dye.
9. Draw padding mangle and name its part.
10. Name the banned dyes.

**PART-B**

((6+10) ×5=80 Marks)

**Answer all the questions in detail**

11. A. Discuss in detail about the criteria for selection of dyes for different textile fibres. (6)  
B. Explain about the terms “Auxochrome” and “Chromophore”. (10)
- (OR)
- C. Classify dyes and give the list of fibres that can be dyed with each dye classification. (6)  
D. Describe in detail about the theory of cotton dyeing. (10)
12. A. Explain the principle and method of application of Direct dye. Also give its dyeing recipe. (6)

B. What do you mean by after treatment? Why it is important in cotton dyed with direct dyes? (10)

(OR)

C. Discuss in detail about the auxiliary chemicals used in dyeing Sulphur dye. State its function for including in the dyeing process. (6)

D. Explain in detail about the effect the process condition to be maintained while dyeing with (10)

i) Direct dyes    ii) Azoic dyes    iii) Sulphur dyes

13. A. Elaborate how dyeing parameters affect the Reactive dyeing process. (6)

B. Describe in detail about the method of application of vat dye and bi-functional reactive dye on cotton fabric. (10)

(OR)

C. Classify Vat dyes in accordance with their chemical constitution. (6)

D. Compare the Vat dyeing process and Reactive dyeing process. (10)

14. A. Discuss in detail about the dyeing of wool with Chrome dyes along with its dyeing recipe. (6)

B. Compare the dyeing of silk with Acid and Metal Complex dyes. (10)

(OR)

C. Explain the mechanism of dyeing wool with Acid dye. (6)

D. Explain the terms "Amphoteric Character" and "Iso-Electric Region". (10)

15. A. Explain in detail about banned dyes and its effect on the consumer and environment. (6)

B. Describe in detail about working principle of jigger with neat illustration. (10)

(OR)

C. Identify a suitable machine for dyeing soft knitted fabrics. Explain its working principle with neat diagram. (6)

D. Illustrate yarn package dyeing machine and name its parts. State its advantages and its limitations. (10)

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Post Diploma in Textile Processing

**APR/MAY-2025 SEMESTER EXAMINATION**

(Regulation-2021)

Semester : I

Time:3 Hours

Course Code & Title : **PDTP104 Introduction to Textile  
manufacture**

Maximum Marks: 100

**PART-A**

(10×2=20 Marks)

**Answer all the questions within two to three sentences**

1. Give the classification of natural and manmade textile fibres.
2. Classify the various types of knitted fabrics.
3. Compare the properties of combed yarn with carded yarn.
4. Write about the objectives of winding process.
5. List the types yarn defects.
6. 40 Ne, 40 Tex, 40 Denier arrange fine to coarser yarn.
7. Compare satin and sateen weaves.
8. List the various elements used in weft knitting machines.
9. Give the types of handlooms.
10. Write any 2 warp and weft way fabric defects.

**PART-B**

((6+10) ×5=80 Marks)

**Answer all the questions in detail**

11. A. Write in brief about the warping, sizing and weaving. (6)  
B. Compare the single, folded and fancy yarn properties and its applications. (10)
- (OR)**
- C. Distinguish the properties of natural and manmade textile fibres with suitable examples. (6)  
D. Explain the various classifications of woven, knitted and non-woven fabrics. (10)
12. A. Briefly explain the flow chart of spinning for cotton. (6)  
B. Write about the objectives and process of carding and drawing. (10)

**(OR)**

- C. Write about the throwing process involved in silk. (6)
- D. Explain with neat sketch the silk reeling process. (10)
13. A. Write in brief about the causes and remedies of any three yarn defects. (6)
- B. Explain the process beaming, drawing and denting. (10)
- (OR)**
- C. Briefly explain the direct and indirect yarn numbering system with suitable examples (6)
- D. Explain the objectives and ingredients used for sizing process. (10)
14. A. Write the properties of plain and twill weaves (6)
- B. Compare the properties of knitted and woven fabrics. (10)
- (OR)**
- C. Draw any 2 design and draft for the derivatives of plain and twill weave (6)
- D. Explain with neat sketch working of circular knitting machine. (10)
15. A. Briefly explain the merits and demerits of powerlooms. (6)
- B. Explain about various types of shuttleless looms and their features. (10)
- (OR)**
- C. Write about the factors influence the weight of the fabrics (6)
- D. Explain the various types of fabric defects with their causes and remedies. (10)

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