

Bangladesh University of Textiles

B. Sc. in Textile Engineering, Part-III, Final Exam. 2010

Subject : Wet Processing-II (Code : TE-304/TM-304)

Time : 3.0 Hours

Marks- 70

(Answer any five questions)

1. a. What are colorants? Mention the sources of natural dyes.
b. "All colorants are not dyes"-justify the statement.
c. What is Direct dye? Name the first Direct dye with chemical structure.
d. Explain the dyeing mechanism of cellulosic fibres with Direct dyes.
e. Discuss the role of temperature, P^H and electrolyte concentration on dyeing cotton fabric with Direct dyes. (2+3+2+4+3=14)
2. a. Explain the vatting process of Vat dyes? Why these dyes are so named?
b. Discuss with suitable recipe the dyeing procedure of cotton yarn with Vat dye.
c. Briefly describe the after-treatments of fabric dyed with Vat dyes.
d. What are the advantages of soluble Vat dyes? (3+6+3+2=14)
3. a. Write the properties of Basic dyes.
b. What is mordrating?
c. Discuss the application method of Basic dye on Acrylic fibre.
d. Describe the working procedure of a continuous dyeing machine for cotton fabric with suitable sketch.
e. What kind of machine is used for dyeing of knit fabric and why? (3+2+4+3+2=14)
4. a. Why Acid dye is so called?
b. Classify Acid dyes with their characteristics.
c. Describe the dyeing procedure of nylon fabric with Acid dye.
d. Give five examples of Acid dyes with their name and chemical structure. (2+3+4+5=14)
5. a. What is pigment? Write the general properties of pigment.
b. Briefly describe the exhaust dyeing method of cotton goods with pigment.
c. Compare the general characteristics of dyes and pigments from the aspect of solubility, traditional applications and main chemical types.
d. What is binder? Mention the desirable qualities of pigment. binder : (3+6+3+2=14)
6. a. Define light. Mention the visible range of spectrum.
b. What is spectrophotometer? Draw a basic sketch of spectrophotometer.
c. Discuss the basic concept of additive and subtractive color mixing theory.
d. Briefly describe the CIE L*a*b* color space. (2+4+3+5=14)
7. a. What is textile printing? Show the flow-chart of textile printing.
b. Explain the functions of print paste ingredients.
c. What is emulsion thickener? Discuss the advantages and disadvantages of using emulsion thickener.
d. What are the advantages of synthetic thickener over natural thickener? (2+5+4+3=14)
8. a. Why screen printing is more popular than other printing methods?
b. Describe the rotary screen printing method with sketch.
c. Differentiate between roller printing and rotary screen printing.
d. Mention different styles of printing and describe 'burn-out' printing.

BANGLADESH UNIVERSITY OF TEXTILES

B.Sc. in Textile Engineering

Level-3 Term-II, Final Examination-2014

Subject: Wet Processing-II (Code: WPE 343)

Time: 3.0 Hrs.

Full Marks: 105

(Use separate answer script for part: A and Part: B)
(All parts of a question must be answered consecutively)

Part-A

(Answer any two questions)

1. (a) What is Textile Printing?
(b) Describe the desired characteristics of print paste.
(c) What are the reasons for using thickener in printing paste?
(d) Describe about haif-emulsion. [3.5+6+5+3=17.5]
2. (a) Enlist styles of textile printing.
(b) Which types of dyes are used in colour discharge printing and why?
(c) What is mesh count? What are the effects of mesh opening on the quality of printed fabric?
(d) What are the instruments required for screen preparation?
(e) Show photochemical process sequences of screen proparation. [3.5+3+4+4+3=17.5]
3. (a) What is screen?
(b) What are the advantages of screen printing process?
(c) Describe flat screen printing process with diagram. [3.5+6+8=17.5]
4. Write Short notes on-
(a) Steam fixation in printing.
(b) Burn-out printing.
(c) Flock printing. [6+6+5.5=17.5]

Part-B

(Answer any two questions)

5. (a) What do you mean by Textile Finishing?
(b) Discuss in brief about functions of finishing.
(c) List down some challenges of chemical finishing.
(d) Name & describe at least two finishes that enhance the appearance of fabric. [3.5+4+5+5=17.5]
6. (a) What is calendaring?
(b) Briefly explain swizzing calendaring process with sketch.
(c) How a permanent effect can be achieved from embossing calendaring process on cotton fabric?
(d) Give some advantages and disadvantages of friction calendaring process. [4+6+3.5+4=17.5]
7. (a) Define wrinkle free or crease recovery finish.
(b) State the problem associated with durable press finishes.
(c) Name some important cross-slinking agents.
(d) Narrate in brief about wrinkle resistant finish. [4+5+3.5+5=17.5]
8. (a) What is raising finish?
(b) Write down the objectives of raising finish.
(c) Discuss about cord wire raising finishing machine with sketch.
(d) Differentiate between single acting and double acting raising machines. [3.5+4+5+5=17.5]

BANGLADESH UNIVERSITY OF TEXTILES

B. Sc. in Textile Engineering

Level-3 Term-II, Final Examination-2015

Subject: Wet Processing-II (Code: WPE 343)

Time: 3.00 Hrs.

Full Marks: 105

(Use separate answer script for Part: A and Part: B)

(All parts of a question must be answered consecutively)

Part: A

(Answer any three questions)

1. (a) What is textile printing? Point out the differences in process sequence between textile dyeing and textile printing.
(b) List out with functions of common ingredients used in print paste.
(c) What is thickener? What are the considering factors before selecting a thickener?
(d) What are the factors considered before printing?

[3+5+5+4.5=17.5]

2. (a) What are the popular styles of textile printing?
(b) What are the basic chemicals used in discharge style of printing? Describe white discharge printing process in cotton fabric by selecting a suitable method.
(c) Why pigment printing is very popular to textile printers?
(d) Discuss the quality related differences between dye printing and pigment printing of cotton fabric.

[3+6.5+4+4=17.5]

3. (a) What is screen printing? Which type of fabric is suitable for screen preparation and why?
(b) Write the mechanism of screen preparation by photochemical process.
(c) Draw and describe the screen printing (flat screen) process for 3 colour design.

[5+5+7.5=17.5]

4. (a) What is synthetic thickener? What are the benefits of using synthetic thickeners over natural thickeners?
(b) Describe (with sketch) the mechanism of sublimation printing.
(c) Make a technical comparison between Ink-jet printing and Screen printing.
(d) In Burn-out style of printing, what does 'burn-out' mean?

[5+6.5+4+2=17.5]

Part: B

(Answer any three questions)

5. (a) Why need textile finishing? Classify textile finishing according to the performance of finish.
(b) List out the machinery need to set up the finishing line of a typical knit and woven dyeing project.
(c) Discuss the mechanism and function of compacting machine with suitable sketch.
(d) Why de-watering is important before drying?

[4+3+6+4.5=17.5]

6. (a) What is Raising? Mention the differences between Fleece and Flannel fabric?
(b) Describe the mechanism of RF-drying.
(c) What are the advantages of RF-drying over Hot-air drying?
(d) Discuss the functions of Stenter machine.

[4+6+3.5+4=17.5]

7. (a) What is textile softener?
(b) "Use of softener is increasing day by day"- Justify with your opinion.
(c) Enlist some desirable properties of textile softener.
(d) Compare the performance of 'Cationic' and 'Non-ionic' softener.

[3+4.5+5+5=17.5]

8. (a) What is repellent finish? Mention different types of repellent finishing in textiles.
(b) Discuss the features of 'water proof', 'water repellent' and 'breathable fabrics'.
(c) Describe the roll-up mechanism of soil release from clothing.
(d) What are the features of Fluorocarbon finishes?

[3+6+5.5+3=17.5]

BANGLADESH UNIVERSITY OF TEXTILES

B. Sc. in Textile Engineering

Level-3 Term-II, Final Examination-2016

Subject: Wet Processing-II (Code: WPE 343)

Full Marks: 105

Time: 3.0 Hrs.

(Use separate answer script for Part : A and Part: B)
(All parts of a question must be answered consecutively)

Part : A

(Answer any three questions)

1. (a) What is Textile printing?
(b) Differentiate between dyeing & printing.
(c) What is Thickener? Enlist the considering factors before selecting a Thickener.
(d) Describe resist style of printing.

[3.5+3+5+6=17.5]

2. (a) Enlist some name of printing methods. Write the disadvantages of roller printing.
(b) How can you assess the quality of printed goods?
(c) Which type of fabric is suitable for screen preparation and why?
(d) What is mesh count? How can you control printing quality by using screen printing method?

[4+4+4+5.5=17.5]

3. (a) Describe flat screen printing process for 3 colour design.
(b) What are the advantages of pigment printing?
(c) Describe a printing process of cotton T-shirt with pigment by selecting a suitable style and method.

[=17.5] 6+3.5
+8

4. Write short notes on:
(a) Burn-out style of printing
(b) Rubber printing
(c) Transfer printing.

[6.5+4+7=17.5]

Part : B

(Answer any three questions)

5. (a) What do you mean by the term Finishing?
(b) Write down about the objectives of finishing.
(c) What are functional finishes? Give some examples of functional finishes.
(d) Discuss in brief about aesthetic finishes.

[4+4+5+4.5=17.5]

6. (a) What is calendaring?
(b) Briefly explain swizzing calendering process with suitable sketch.
(c) Enlist the function of antistatic finish.
(d) Classify softener with examples.

[2.5+5+5+5=17.5]

7. (a) Write down the objectives of raising finish.
(b) State the factors on which raising effect depends
(c) Describe different raising machines.
(d) Differentiate between sueding and shearing process.

[4+4+6+3.5=17.5]

8. (a) Define water resistant finish.
(b) Narrate in brief about water repellent finish.
(c) Explain paper touch finish with a suitable recipe.
(d) Describe shortly about Bactero static and fungi static finish.

[3.5+5+5+4=17.5]

BANGLADESH UNIVERSITY OF TEXTILES

B. Sc. in Textile Engineering

Level-3 Term-I, Final Examination-2017

Subject: Wet Processing-II (Code: WPE 343)

Time: 3.0 Hrs.

Full Marks: 105

(Use separate answer script for Part: A and Part: B)
(All parts of a question must be answered consecutively)

Part : A

(Answer any three questions)

1. (a) Describe the printing process of cotton fabric by selecting a suitable style and method.
(b) Write difference between discharge and resist style printing.
(c) Mention the function of binder and fixer in pigment printing. [8+5+4.5=17.5]
2. (a) Differentiate between dyeing and printing. One
(b) Mention the functions of defoaming agent, hygroscopic agent and dispersing agent in a print paste.
(c) What are the essential qualities of a textile printing thickener?
(d) Write short note on half emulsion and synthetic thickener. [3+3+5+6.5=17.5]
3. (a) Enlist the technical requirements of frames and mesh fabrics used in screen printing method.
(b) Illustrate the features of 5-color fully automatic flat-screen printing machine with sketch.
(c) Clarify basic principles of thermo printing process.
(d) Mention the special features of DOD digital printing machine. [4.5+7+3+3=17.5]
4. (a) Differentiate between screen printing and roller printing. Mention the problems of pigment printing.
(b) Write the process sequence and suitable recipe for dyeing of cotton fabric with reactive dye by All in method.
(c) State the fixation methods available for polyester fabric printed with disperse dye.
(d) Mention the functions of printing ingredients used for printing silk fabric with acid dye. [6.5+5+3+3=17.5]

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Part : B
(Answer any three questions)

5. (a) What do you understand by textile finishing technology? Why finishing process are carried out?
(b) Classify textile finishing on the basis of finishing nature and durability.
(c) Write short note on "Milling" and "Decatizing" of wool finishing.
(d) Compare between napping and sueding process. [4+4+5+4.5=17.5]
6. (a) Differentiate between chemical and mechanical finishing.
(b) Why cellulosic fibres are more prone to creasing than synthetic fibres- Explain?
(c) Briefly explain friction calendaring process with figure.
(d) Explain, how 3D design is created on a fabric by emboss calendaring process? [4+4+6+3.5=17.5]
7. (a) How H. A. Lowe brought about a massive significance of mercerization process in 1890?
(b) Enlist factors of mercerization. Why an increased strength of cellulosic fiber is observed after this treatment?
(c) Describe a typical wash and wear finishing application process including recipe.
(d) Analyze prospective points of ammonia mercerization over conventional process. [3+5+5.5+4=17.5]
8. (a) "Contact angle of a liquid determines repellency"- prove it.
(b) Define LOI. What are the chemicals used as flame retardant finish?
(c) What is heat setting? Mention functions of stenter machine.
(d) Differentiate waterproof and water repellent fabric. [5+5+3.5+4=17.5]

**(Use separate answer script for Part: A and Part: B)
(All parts of a question must be answered consecutively)**

Part : A
(Answer any three questions)

1. (a) Distinguish between drying and curing.
(b) Mention the functions of urea, oxidizing agent and alkali in a print paste.
(c) Compare between emulsion and half emulsion thickener.
(d) Show the classification of textile thickener with example. **[2+4+5+6.5=17.5]**
2. (a) Explain a printing style for creating yellow polka dots on a blue background fabric.
(b) Describe mechanical and electrostatic flocking process with figure.
(c) "Ausbrenner is a printing style that removes part of the fibres from fabric"- Justify with your opinion.
(d) What is mesh fabric? How a printing screen can be prepared? **[2.5+7+4+4=17.5]**
3. (a) What are the available methods of textile printing?
(b) Illustrate the photochemical technique for printing screen preparation.
(c) Differentiate between flat-bed and rotary screen printing machine.
(d) Mention the features of continuous ink jet digital printing machine. **[4+5+5+3.5=17.5]**
4. (a) Interpret a typical printing procedure of nylon with acid dyes including recipe.
(b) Which thickener is recommended for printing cotton with reactive dye & why? Develop a recipe for reduction clearing.
(c) How can you print a cotton fabric with pigments? Refer benefits of pigment printing over other dyestuffs.
(d) Mention types and requirement of a binder for textile pigment printing. **[5+3.5+5+4=17.5]**

Part : B
(Answer any three questions)

5. (a) Classify finishing process on the basis of performance & durability.
(b) Show the sequence of knit fabric finishing for both open & tubular.
(c) "Carbonizing is done on worsted fabric"- Describe why?
(d) Write notes on "Plisse" and "Peace" finish. How Tg relates with heat setting temperature? **[4+4+4+5.5=17.5]**
6. (a) Compare friction calendaring with embossing calendaring.
(b) Define moire effect. Differentiate Napping and Sueding.
(c) Illustrate chafing Calendering.
(d) "Cationic softener impairs hydrophilicity but anionic softener increases"- evaluate rationally with figure. **[3+4+6.5+4=17.5]**
7. (a) Explain why strength and luster of cotton fabric is increased after mercerization.
(b) Compare ammonia process with conventional and hot mercerization.
(c) How MR% influences crease formation and static electricity generation on synthetic fabric.
(d) What is flip flop mechanism? How dual action fluorocarbon works to release soil? **[4+3+5+5.5=17.5]**
8. (a) How contact angle determines repellency? Show mechanism of water repellency.
(b) Show mechanism of catching fire. Give an example of endothermic decomposition reaction.
(c) Define Chlorine retention phenomena.
(d) Point out the requirements of antimicrobial agents. Describe controlled release mechanism. **[6+4.5+2+5=17.5]**

(Use separate answer script for Part : A and Part: B)
(All parts of a question must be answered consecutively)

Part : A

(Answer any three questions)

1. (a) (b) (c)

What is textile printing? Describe various stages of textile printing?

What are the requirements of an ideal print paste?

State functions of different print paste ingredients with examples.

[4+2+6=12]

2. (a) (b) (c) (d)

What are the functions of textile thickeners?

Give the classifications of textile thickeners.

Describe the factors which are considered commonly to select suitable thickeners.

Briefly discuss about synthetic and emulsion thickeners.

[2+2+4+4=12]

3. (a) (b) (c)

Discuss about the faults in textile printing.

Describe the printing mechanism of a fully automatic rotary screen printing machine for six colors with sketch.

Write short notes on direct, resist, and discharge style of printing.

[3+5+4=12]

4. (a) (b) (c)

Briefly describe the printing process of polyester fabric with disperse dye.

Write short notes on the following terms-

(I). Burn- out printing (II). Flock printing.

What is digital printing? Discuss about the digital printing method.

[4+4+(1+3)=12]

Part : B
(Answer any three questions)

5. (a) (b) (c) (d)

What is textile finishing? Classify finishing on the basis of durability.

Differentiate between mechanical and chemical finishing.

What are the factors should be considered during textile chemical finishing?

Write short note on moireing.

[1+3)+3+2+3=12]

6. (a) (b) (c) (d)

Briefly describe the friction calendering.

Write down the parameters required in schreiner calendering to achieve silk finish on cotton goods.

What is raising finish? Mention the objectives of raising.

Compare among napping, shearing and sueding

7. (a) (b) (c) (d)

Describe the mechanism of repellency.

[4+2+(1+2)+3=12]

Distinguish between water repellent and water proof fabrics.

Mention the advantages and disadvantages of silicone water repellents.

Discuss about the factors affecting soil release finish.

8. (a) (b) (c)

What are the properties of an effective anti-microbial finish?

[4+2+3+3=12]

Describe the parallel streak method of evolution of anti-microbial activity.

State the methods of disruption of combustion cycle in flame retardant finish.

[3+5+4=12]