

**KHULNA UNIVERSITY OF ENGINEERING & TECHNOLOGY**

*Department of Textile Engineering*

B. Sc. Engineering 4th Year Backlog Examination, 2018

**TE-4109**

(Fabric Structure and Design-II)

Time: 3 Hours

Total Marks: 210

**N.B.:** i) Answer any THREE questions from each section in separate scripts.

ii) Figures in the right margin indicate full marks.

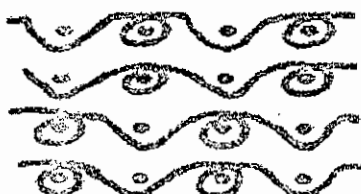
iii) Assume reasonable data if missing any.

**SECTION-A**

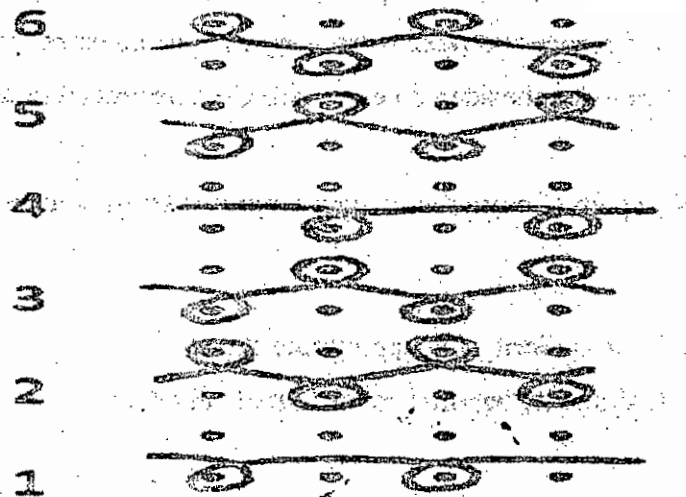
- 1(a) Define color and weave effect with pattern table. 10
- 1(b) Draw the Shepherd's check pattern having order of color 6:6 and weave type  $\frac{2}{2}$  (z) twill. 15
- 1(c) Write down the main features of figuring with extra thread design. 10
- 2(a) Show the weave plan of Extra warp design having motif repeat size 16×16. 15
- 2(b) Make a list of differences between extra warp design and extra weft design. 10
- 2(c) Which points are to be considered before going to construct a double cloth? 10
- 3(a) Draw the weave plan of cross foot pattern having order of color 4:4 and weave type  $\frac{2}{2}$  (z) matt. 15
- 3(b) Classify double cloth fabric with appropriate sketch. 10
- 3(c) State the standard quality parameters of figured velveteen. 10
- 4(a) Classify woven pile fabrics. 05
- 4(b) Write short notes on: Corduroy and Manchester fabrics. 10
- 4(c) Describe the pile forming principle of 3-pick terry. 15
- 4(d) What are the end uses of terry cloths? 05

**SECTION-B**

- 5(a) Differentiate between rib and purl design. 10
- 5(b) Draw the notation diagram of double pique design. 10
- 5(c) Find out total number of needles, total number of cams, total number of knit cams, total number of tuck cams and total number of miss cams from following design (Where 4 truck and 30" machine diameter). 15



- 6(a) What is meant by four truck machine? State the basic concept of Jacquard design with proper example. 15
- 6(b) Differentiate between full cardigan and half cardigan with notation diagram. 15
- 6(c) Make a list of some single jersey derivatives. 05
- 7(a) Make a short note on: 6×3, 2×1, and 4×2 rib design. 12
- 7(b) Differentiate between feeder stripe & auto stripe machine. 12
- 7(c) Find out the cam arrangement & needle arrangement of swiss double pique (based on rib gaiting). 11
- 8(a) What are the basic requirements to make interlock design? 12
- 8(b) Write down some name of interlock derivatives design. 05
- 8(c) State the common features of multi-feeder stripe design. 10
- 8(d) Find out cam and needle arrangements of following designs: 08



---END---

**KHULNA UNIVERSITY OF ENGINEERING & TECHNOLOGY**

*Department of Textile Engineering*

B. Sc. Engineering 4<sup>th</sup> Year Backlog Examination, 2018

**TE4113**

(Textile Testing and Quality Control-II)

Time: 3 Hours

Total Marks: 210

- N.B.:** i) Answer any THREE questions from each section in separate scripts.  
ii) Figures in the right margin indicate full marks.

**SECTION-A**

- 1(a) What is WRAP? State the WRAP certifications levels. 12
- 1(b) What is Oeko-Tex-100<sup>+</sup>? Write down the different categories of textiles according to Oeko-Tex. 15
- 1(c) Write short notes on: i) GOTS, and ii) REACH. 08
- 2(a) How will you express the hardness of water? 05
- 2(b) Describe a standard test to show the presence of starch and/or PVA in fabric. 15
- 2(c) State the dye-house water quality. 08
- 2(d) What is BAN? What precautions should be taken for dye bath for a particular fabric dyeing depending on the higher and lower value of BAN? 07
- 3(a) Explain the fabric properties those have effects on air permeability. 14
- 3(b) Differentiate between water proof and water repellent. 06
- 3(c) Explain the widely used test for water penetration and absorption of fabric. 15
- 4(a) Write short note on flame retardant finish. 05
- 4(b) Write about the factors affecting the flame resistance. 10
- 4(c) Describe the 45° flame test for standard ASTM D-1230-94. 15
- 4(d) List some chemicals which reduce the flammability of the treated fabric. 05

**SECTION-B**

- 5(a) What is color fastness? Describe a test of color fastness to wash according to an established standard. 15
- 5(b) Show a format of a test report of color fastness to light mentioning the standard. 15
- 5(c) Write short note on blue wool. 05
- 6(a) What is pilling? Explain a pilling test with an established evaluation procedure. 10
- 6(b) Write down the factors affecting abrasion resistance. 08
- 6(c) Discuss the Bundesmann water repellency test with the assessment of the result. 10
- 6(d) Briefly explain the reasons and remedies of pilling. 07
- 7(a) What is serviceability? State the merits and demerits of both wearer trials and laboratory test. 15

7(b)	Show different light sources used in textile testing.	07
7(c)	Write short notes on: i) Multi-fiber fabric; and ii) Gray scales.	08
7(d)	What is grab test?	05
8(a)	Define snagging. Show a snagging test with an established evaluation procedure.	09
8(b)	Discuss the procedure of carrying out a crease recovery test.	10
8(c)	Describe a carpet thickness test.	08
8(d)	State a durability measurement test of a carpet with necessary diagram.	08

--) END (---

**KHULNA UNIVERSITY OF ENGINEERING & TECHNOLOGY**

*Department of Textile Engineering*

B. Sc. Engineering 4<sup>th</sup> Year Backlog Examination, 2018

**TE4113**

(Textile Testing and Quality Control-II)

Time: 3 Hours

Total Marks: 210

**N.B.:** i) Answer any THREE questions from each section in separate scripts.

ii) Figures in the right margin indicate full marks.

**SECTION-A**

- 1(a) What is WRAP? State the WRAP certifications levels. 12
- 1(b) What is Oeko-Tex-100<sup>+</sup>? Write down the different categories of textiles according to Oeko-Tex. 15
- 1(c) Write short notes on: i) GOTS, and ii) REACH. 08
- 2(a) How will you express the hardness of water? 05
- 2(b) Describe a standard test to show the presence of starch and/or PVA in fabric. 15
- 2(c) State the dye-house water quality. 08
- 2(d) What is BAN? What precautions should be taken for dye bath for a particular fabric dyeing depending on the higher and lower value of BAN? 07
- 3(a) Explain the fabric properties those have effects on air permeability. 14
- 3(b) Differentiate between water proof and water repellent. 06
- 3(c) Explain the widely used test for water penetration and absorption of fabric. 15
- 4(a) Write short note on flame retardant finish. 05
- 4(b) Write about the factors affecting the flame resistance. 10
- 4(c) Describe the 45° flame test for standard ASTM D-1230-94. 15
- 4(d) List some chemicals which reduce the flammability of the treated fabric. 05

**SECTION-B**

- 5(a) What is color fastness? Describe a test of color fastness to wash according to an established standard. 15
- 5(b) Show a format of a test report of color fastness to light mentioning the standard. 15
- 5(c) Write short note on blue wool. 05
- 6(a) What is pilling? Explain a pilling test with an established evaluation procedure. 10
- 6(b) Write down the factors affecting abrasion resistance. 08
- 6(c) Discuss the Bundesmann water repellency test with the assessment of the result. 10
- 6(d) Briefly explain the reasons and remedies of pilling. 07
- 7(a) What is serviceability? State the merits and demerits of both wearer trials and laboratory test. 15

7(b)	Show different light sources used in textile testing.	07
7(c)	Write short notes on: i) Multi-fiber fabric, and ii) Gray scales.	08
7(d)	What is grab test?	05
8(a)	Define snagging. Show a snagging test with an established evaluation procedure.	09
8(b)	Discuss the procedure of carrying out a crease recovery test.	10
8(c)	Describe a carpet thickness test.	08
8(d)	State a durability measurement test of a carpet with necessary diagram.	08

--> END (---

**KHULNA UNIVERSITY OF ENGINEERING & TECHNOLOGY**

*Department of Textile Engineering*

B. Sc. Engineering 4<sup>th</sup> Year Backlog Examination, 2018

**IPE 4121**  
(Industrial Management)

Time: 3 Hours

Total Marks: 210

- N.B.:** i) Answer any THREE questions from each section in separate scripts.  
ii) Figures in the right margin indicate full marks.

**SECTION-A**

- 1(a) Define Industrial Management. Discuss the functions of management. 12
- 1(b) How are management and administration similar and different? 10
- 1(c) What is meant by Scientific Management? Write down the principles of scientific management. 13
- 2(a) What is meant by organization? Write down the merits and demerits of line and staff organization. 13
- 2(b) Explain Contingency theory school with suitable example. 10
- 2(c) What are the skills that have to be possessed by a manager? Explain. 12
- 3(a) Mention the advantages and disadvantages of MBO process. What is SMART method? 10
- 3(b) Forecast based on averages. Given the following data: 15

Period	Age	Demand
1	5	42
2	4	40
3	3	43
4	2	40
5	1	41

Prepare a forecast using each of these approaches-

- (i) The appropriate naive approach (For period 6).
- (ii) A three-period moving average.
- (iii) A weighted average using weights of 0.50(most recent), 0.30 and 0.20.
- (iv) Exponential smoothing with a smoothing constant 0.40.
- 3(c) Write down the advantages of decentralization over centralization in organizational structure. 10
- 4(a) Discuss the interrelationship among different information systems. 12
- 4(b) Differentiate between sole Proprietorship and Partnership in respect of business ownership. 13
- 4(c) Write short notes on: (i) Pareto analysis, and (ii) SWOT analysis. 10

## SECTION-B

- 5(a) Define leadership. Differentiate between authoritarian and democratic leadership styles. 12
- 5(b) What are the key motivational techniques? Discuss Maslow's theories of motivation. 13
- 5(c) Why selection is called negative process? 10
- 
- 6(a) Write down the main objectives of job evaluation and merit rating. 10
- 6(b) Differentiate between Halsey plan and Rowan plan for wage incentive with proper diagram. 10
- 6(c) A job is rated in terms of wages of TK 800 per day. The standard time set for the job is 10 days, 8 hrs/day. Two workers have taken 76 and 86 hours respectively for the completion of the job. A bonus of 75% on the time taken will be given only to those who have completed the job in the standard time. Calculate the earnings of each individual by Bedaux plan. 15
- 
- 7(a) Write down some popular ISO standards. "ISO is management standard not process standard"- Explain. 12
- 7(b) What is meant by ISO 9001 & 14001? What are the benefits of ISO 14001? 12
- 7(c) Define BGMEA. What are the functions of FBCCI? 11
- 
- 8(a) Define TQM. Explain the costs of quality. 10
- 8(b) Write short notes on : 14  
(i) Stratification analysis, and (ii) Lean manufacturing.
- 8(c) What is meant by TPM? Differentiate between TQM & TPM. 11

--> END (---



**KHULNA UNIVERSITY OF ENGINEERING & TECHNOLOGY**

*Department of Textile Engineering*

B. Sc. Engineering 4th Year Backlog Examination, 2018

**TE-4133**

(Technical Textiles)

Time: 3 Hours

Total Marks: 210

**N.B.:** i) Answer any THREE questions from each section in separate scripts.

ii) Figures in the right margin indicate full marks.

iii) Assume reasonable data if missing any.

**SECTION-A**

- 1(a) What is Technical Textiles? How do technical textiles differ from conventional textiles? 10
- 1(b) Point out the main categories of technical textiles with their applications. 15
- 1(c) Write down the scope of technical textiles. 10
- 2(a) Classify the medical textiles. 05
- 2(b) Explain – (i) Sutures, (ii) Scan 2 knit, and (iii) Medtex in soft tissue implant. 18
- 2(c) Write down the advantages of textile material for medical applications. 12
- 3(a) Classify geo-textiles with example. 15
- 3(b) Write short notes on: i) Geonets, and ii) Geosynthetic clay liners. 10
- 3(c) Describe the raw materials used for geotextiles. 10
- 4(a) Define Airbag. Discuss the basic mechanism of air bag used in automotive textiles. 15
- 4(b) Why nylon 6,6 is superior for making tyre? Explain. 10
- 4(c) Write short notes on :i) Tyre cord yarn, and ii)Tyre cord fabric. 10

**SECTION-B**

- 5(a) Define protective clothing. What properties are required for 'Protech'? 12
- 5(b) Write short notes on the followings: 18
- i) Radiation protective clothing
- ii) Biological protective clothing
- iii) Clean room textiles.
- 5(c) Mention the fibers name which are required for thermal protective clothing. 05
- 6(a) What are the requirements of textile fiber as a filter media? 10
- 6(b) State the mechanism and application of separation membrane. 15
- 6(c) **Make a comparative study among micro, ultra and nano filtration.** 10
- 7(a) Discuss the basic differences between coating and lamination 08
- 7(b) Briefly describe 'Dip coating method' with suitable sketch. 12

- 7(c) Narrate the factors required for evaluating the performance of laminated fabric. 10
- 7(d) What is a bonded fabric? 05
- 8(a) What is meant by smart textiles? Write down the components and benefits of using smart textiles. 13
- 8(b) Draw a systematic diagram on how a smart material works. 07
- 8(c) Define Conductive textile. State the process of making conductive textiles. 10
- 8(d) What is meant by "Phase Change Material (PCM)"? 05

---END---