KHULNA UNIVERSITY OF ENGINEERING &TECHNOLOGY
Department of Textile Engineering
B. Sc. Engineering 3rd Year 2ndTerm Examination, 2017
TE-3201
(Yarn Manufacturing Engineering-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)	Describe the operation involved in ring frame.	06
1(b)	State the different yarn guiding devices in ring frame.	06
1(c)	Mention the merits and demerits of small and large ring dia.	07
1(d)	Write short notes on i) Break draft ii) Traveller	06
1(e)	Describe the 3-over-3 double drafting system with diagram.	10

2(a)	Write down the effects of combing. Mention the types of comber.	05
2(b)	Describe a modern lap former with a neat sketch.	10
2(c)	What are the reasons of getting long fibers in the noil? Write short note on: drafting system of a comber.	08
2(d)	Discuss the backward feed with necessary diagrams.	07
2(e)	Feed/nip = 0.25'', Nips/minute = 300, No. of head = 8, Noil = 15% and efficiency = 90%. Find out the production/shift of comber when a) Feed lap weight = 850 grain/yd b) Feed lap hank = 0.0095	05

3(a)	Make a spin plan for a modern cotton spinning mill where no. of spindles = 25000 and average yarn count = 60^S	30
3(b)	Show different types of wastes of a ring frame.	05

4(a)	Point out the limitations of ring frame.	05
4(b)	What is end breakage rate? State the technical causes of end breakage.	10
4(c)	Establish a relation between traveler speed and spindle speed.	06
4(d)	What is inching motion? What is Ring Data System?	05
4(e)	Mention some modern spinning system for short and long staple fibers.	04
4(f)	Write short note on sliver can.	05

SECTION-B

5(a) Write the objects of jute draw-frame. Mention the types of jute draw-frame.   06

5(b) Describe the working principle of push-bar drawing frame with diagram.   15

5(c) Differentiate between Push-bar and spiral draw frame.   06

5(d) Define reach and nip. Also mention their effects for processing fiber in jute draw-frame.   08

6(a) Write features of Gardella 18-M draw-frame.   06

6(b) Why crimp is necessary on draw-frame sliver? Describe the crimp-box mechanism of draw frame.   15

6(c) Write short notes on: i) Drawing ii) Lead% iii) Doubling   06

6(d) Find out the lb/spyndle from the following data: 08

Breaker card cloth length = 13 yds; Dollop weight = 30 lb; Draft = 11

Finisher card draft = 16; Finisher card doubling = 10

1st draw frame draft = 4; 1st draw frame doubling = 2

2nd draw frame draft = 6; 2nd draw frame doubling = 3

3rd draw frame draft = 9 ; 3rd draw frame doubling = 2

Spinning frame draft = 12

(Breaker card to spinning frame waste = 10%)

7(a) How will you control the yarn tension of jute spinning frame? Explain.   06

7(b) Point out the features of spinguard spinning frame.   04

7(c) Find out the production/day of a jute sliver spinning frame from the following data: 05

Flyer speed = 4000 rpm

Yarn count = 10 lb/spyndle

K-factor = 12; Efficiency = 80%; Waste = 4%

No. of flyers/ frame = 100

7(d) Describe a bobbin building mechanism of a jute spinning machine.   08

7(e) Describe a slip draft jute spinning machine with necessary figures.   12

8(a) If lap preparation is not done before combing, what defects are found in combed sliver?   05

8(b) Depict the functions of a comber with neat sketch.   10

8(c) Differentiate between cotton and jute winding principles. Prove that *bobbin dia* $\propto$ $\dfrac{1}{bobbin\ speed}$ 10

8(d) Show the relation between: 05

i)Draft and DCP ii) TPI and TCP iii) LCP and roving hank iv) LCP and coil/inch

8(e) Spindle speed = 1150 rpm, TM = 0.90, front roller delivery = 760 inch/minute, No. of spindles/frame = 124 and efficiency = 88%; Find production/hr/frame in kg of simplex.   05

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KHULNA UNIVERSITY OF ENGINEERING &TECHNOLOGY
Department of Textile Engineering
B. Sc. Engineering 3rd Year 2ndTerm Examination, 2017
TE-3205
(Wet Processing Engineering-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) Write down the classification of reactive dyes according to reactive group. 07

1(b) How to increase the wet fastness of reactive dyed fabric? 06

1(c) Write down the mechanism of halogenated hetero-cyclic and vinyl sulphone reactive groups of reactive dyes for fixation with textile materials. 10

1(d) What is hydrolysis? Explain the alkali and acid hydrolysis with proper chemical reaction. 12

2(a) State the effect of electrolyte, liquor ratio, temperature and pH of dye bath on reactive dyeing. 12

2(b) For which purposes migration technique is needed for Hot brand reactive dyes? Explain with dyeing curve. 07

2(c) What is meant by gas fading of disperse dyes? How to solve this problem? 06

2(d) Describe the technology of disperse dyeing for polyester fabric with proper curve. 10

3(a) What is the reason of sulphur dye named? Mention the chromophores of sulphur dyes with proper sketch. 08

3(b) What will be the probable causes of bronziness and tendering at sulphur dyed fabric and how to minimize these problems? 10

3(c) State the methods of oxidation of sulphur dyes. Why $K_2Cr_2O_7$ is not convenient for oxidizing of sulphur dyes? Explain. 07

3(d) Describe the chemistry of azoic dyeing process with proper chemical reaction. 10

4(a) What is pigment printing? Why curing process is done for pigment print fixation? Explain. 07

4(b) How many ways disperse print can be fixed on the fabric? 08

4(c) Describe the print-dry-steam and print-dry-cure methods for reactive printing. When print-dry-cure method can be applied for reactive printing? 12

4(d) Mention the functions of ingredients used in pigment printing. 08

SECTION-B

5(a) Write down the general requirements of selecting textile finishing chemicals. 07

5(b) What changes happened in fabric due to heat setting? Explain with controlling factors 12
of heat setting.

5(c) What is overfeed%? The lengthwise shrinkage of a knit fabric is -10% and widthwise 08
is -2%, which is not acceptable? Discuss the shrinkage correction procedure of this
fabric.

5(d) Which softener is normally used to finish white colored fabric? Discuss this with the 08
application procedure.

6(a) Mention the objects of calendaring. 04

6(b) Describe chase calendaring with fabric passage diagram. 12

6(c) Discuss briefly the controlling parameters of calendaring. 07

6(d) Compare the finishing performance of double action raising and single action raising. 06
Which one is mostly used and why?

6(e) Write short notes on below finishing items: 06
    i)   Peach finish
    ii)   Carbon peach finish

7(a) Why antimicrobial finish is needed for textile products? Explain with some examples 08
of textile products where antimicrobial finishes are applied.

7(b) Write down the factors that influence the textile products for soiling. 10

7(c) What is meant by combustion and pyrolysis temperature? 05

7(d) How many ways can we disrupt the combustion cycle to make the flame retardant 12
textile substrate?

8(a) Why damping is necessary during sanforizing? Describe sanforizing process with 12
relevant figure.

8(b) What are the physical and chemical changes happened due to mercerization? 07

8(c) What is BAN? Discuss the controlling parameters of mercerization. 08

8(d) Describe the mechanism of crease mark formation in fabric. 08

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KHULNA UNIVERSITY OF ENGINEERING &TECHNOLOGY
Department of Textile Engineering
B. Sc. Engineering 3rd Year 2ndTerm Examination, 2017
TE-3207
(Apparel Manufacturing Engineering-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) Illustrate an industrial sewing needle and mention its different parts along with a brief   15
      description of their functions.

1(b) Write short note on sewing needle numbering.   05

1(c) Distinguish among stitch class 100, stitch class 300, and stitch class 400.   10

1(d) Why sewing thread consumption is more in case of single thread chain stitch that lock   05
      stitch?

2(a) What is meant by defect in case of apparel manufacturing? Discuss any three defects   13
      related to stitch formation with sketch, causes and remedies.

2(b) Describe the causes of seam pucker and shed some light on the remedies.   12

2(c) Define seam. Write down the characteristics of a good seam.   10

3(a) Discuss sew ability and durability of sewing thread.   08

3(b) Write short note on core spun sewing thread.   07

3(c) Mention the necessity of folder, guide, compensating foot, and slack feeder in a sewing   12
      room.

3(d) Show the schematic diagram of an industrial sewing machine.   08

4(a) What are meant by simple automatics and automated workstations?   06

4(b) State the common features of a modern flatlock sewing machine.   07

4(c) Sketch feed of the arm bed and overedge bed of sewing machine. Discuss the   12
      circumstances when machines with these beds are preferable.

4(d) Why various feed mechanisms are used in sewing machines? Among the mostly used   10
      feed mechanisms, which one do you think is the best one and why?

SECTION-B

5(a) What is alternative methods of joining? State the limitations of alternative methods of   10
      joining.

5(b) Briefly describe the principles of ultrasonic welding with neat sketch.   15

5(c) Write down the differences between sewing method and alternative method of joining 10
fabric.

6(a) Define pressing? What are the objects of pressing? 08

6(b) Write down the features and working principles of "Hoffman Press". 12

6(c) How "Dolly press" can help a garment to form in a better shape? State and describe 10
different types of pressing faults.

6(d) What steam is used in pressing? 05

7(a) Elaborate the following care label signs: 05

i) ii) iii) iv) v)

7(b) Sketch and describe different parts of a closed end zipper. 12

7(c) Mention the care and precautions needed for a metal zipper. 10

7(d) Write short note on VELCRO. 08

8(a) List out the machines and equipment used in a garments finishing room. 07

8(b) A PE polybag having length of 25 inch, width of 15 inch, 130 gauge thickness and if 08
the cost of polymer is $0.40 per lb. Find out the cost of 1 pc polybag.

8(c) "The quality of garments depends on quality of trim"- Justify the statement. 08

8(d) Illustrate the standard folding of a basic shirt. 07

8(e) Sketch the X-sectional view of 3 ply and 7 ply cartons. 05

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KHULNA UNIVERSITY OF ENGINEERING & TECHNOLOGY
Department of Textile Engineering
B. Sc. Engineering 3rd Year 2ndTerm Examination, 2017
TE-3231
(Merchandising and Marketing)
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) Distinguish between selling concept and marketing concept.   06

1(b) What is meant by MIS? What are the basic components of MIS?   07

1(c) What is marketing? What does product include?   10

1(d) Briefly discuss the new product development process.   12

2(a) Why is it important for a product to be associated with specific label, packaging and   05
identification?

2(b) Which factors affect marketer to create the ideal blend of promotional activities for   07
their business?

2(c) Calculate the break-even point in sales units and dollars from following information: 08
Price per unit $15
Variable cost per unit $7
Total fixed cost $9000

2(d) Differentiate between market skimming and market penetration pricing strategies. How   15
to set product mix pricing strategies?

3(a) Explain the stages involved in marketing research process in textile and clothing sector. 13

3(b) What is meant by marketing segmentation? Briefly discuss the framework for   12
conducting market segmentation.

3(c) Discuss the importance and benefits of corporate social responsibilities to the   10
marketing of textile companies in Bangladesh.

4(a) What is meant by SWOT analysis? How can we identify threats for a textile industry?   08

4(b) What is consumer behavior? Discuss the types of buying decisions with example.   12

4(c) Which factors influence the consumer behavior? Briefly discuss the buying process of   15
institutional customers.

SECTION-B

5(a) State the roles and responsibilities of a merchandiser. What qualities should a merchandiser have?   11

5(b) What is merchandising? Briefly discuss the activities involved in merchandising.   12

5(c) How visual merchandising is done? Mention the advantages of visual merchandising.   12

6(a) Define merchandising planning. Discuss different types of merchandise.   12

6(b) State the stages of developing sales forecast in merchandising planning.   10

6(c) What is sales forecasting? What are the limitations of sales forecasting.   13

7(a) Define retail merchandising. Narrate the steps of retail merchandising.   10

7(b) Discuss the factors associated with merchandise assortment.   13

7(c) Why non-store retailing is getting popular day by day? Discuss different types of non-store retailing.   12

8(a) What is supply chain management? Give brief idea on production planning process in apparel manufacturing.   12

8(b) What is global sourcing? State the key factors and risks associated with global sourcing.   13

8(c) Write down the flow chart of fabric sourcing procedure.   10

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KHULNA UNIVERSITY OF ENGINEERING &TECHNOLOGY
Department of Textile Engineering
B. Sc. Engineering 3rd Year 2ndTerm Examination, 2017
TE-3203
(Fabric Manufacturing Engineering-I)

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) State Knowles positive dobby shedding mechanism with neat sketch.   10

1(b) Briefly describe the construction and working procedure of cam dobby.   15

1(c) Calculate the time required to complete a weavers' beam having 1500 yds of warp on   10
it. The woven cloth is required to have 60 PPI. Loom speed is 220 and efficiency is
90%. Assume any missing data.

2(a) Explain the working principle of SLSC Jacquard.   10

2(b) Derive the formula for determining the power required for picking in a shuttle loom. 07

2(c) Describe the tappet and cone under picking mechanism.   10

2(d) Differentiate between over picking and under picking.   03

2(e) Find out the speed of the shuttle when passing across sley race of 48 inch wide loom. 05
The speed of the loom being 200 PPM and θ is 125°.

3(a) Mention the advantages and disadvantages of high sley eccentricity ratio.   07

3(b) State the action of a single beat up mechanism with figure.   10

3(c) Sketch the Bartlet positive let-off mechanism with proper labeling.   06

3(d) What are the requirements of let-off motion?   04

3(e) Calculate the yarn consumption of a loom per hour running at 250 PPM for producing   08
$\frac{90x75}{28x24}x56''$ fabric.

4(a) Sketch and illustrate the 7-wheel take-up mechanism. Also determine PPI and Loom   15
Constant from typical data.

4(b) Write the features of power shuttle loom.   06

4(c) How would you make designs on fabrics by weaving?   06

4(d) Calculate the production per shift at 90% efficiency of a weaving mill in average   08
26 picks/cm from the following data:

No. of Loom	Picks/cm	PPM
80	28	210
110	27	200
25	30	220

SECTION-B

5(a) Prove that $S = \frac{h^2 xi}{2L_1^2}$ Where all symbols indicate relevant meanings.   20

5(b) Describe the defects of tappet shedding.   09

5(c) Find the RPM of bottom shaft and crank shaft from the following: No. of teeth of the crank shaft = 48T, RPM of counter shaft = 75, Picks to the round = 4   06

6(a) What is meant by warp knitted fabric? Discuss the basic features of warp knitted fabric.   09

6(b) Identify true or false from following underlined questions: 14

     i)   Needle are thin metal plats drilled with hollow in their lower end through which a warp end may be threaded.

     ii)   Conesare used in warp knitting machine.

     iii)   Pattern wheel pullsthe guide bar away from pattern mechanism. So underlap is produced.

     iv)   Push rod pushes the needle bar.

     v)   'C' means that both fork and tail are ground.

     vi)   Wire take down the fabrics in a certain width.

     vii)   There are 4 basic overlap/ underlap variations.

6(c) Write short note on basic lapping movements.   12

7(a) Find out the following warp knitted design with accurate lapping diagram, run-in-ratio and link arrangement.   18

     i) Reverse locknit warp knitted fabric.

     ii) Locknit warp knitted fabric.

     iii) Satin fabric.

7(b) Write down the features of Raschel warp knitted machine.   07

7(c) Write short note on Carbine needle.   04

7(d) Describe Queenscord design with neat sketch.   06

8(a) What is meant by fall-plate patterning? Draw and describe the working principle of a fall plate machine.   15

8(b) Find out the link arrangement from chain notation of satin type atlas and velvet type atlas.   10

8(c) Why flange beam is used in warp knitting and cone in weft knitting?   10

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