KHULNA UNIVERSITY OF ENGINEERING & TECHNOLOGY
Department of Textile Engineering
B. Sc. Engineering 3rd Year 2nd Term Examination, 2016
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.

SECTION-A

1(a)   What are the contributions of combing to yarn quality?   10

1(b)   Find the no. of comber machines required to process 45000 kg/day of 32^s Ne yarn from   10
the following particulars:

Feed/nip =4.6 mm

Nips/minute=380

Lap wt.=1000 grain/yd

No. of heads/frame=8

Noil extraction =16%

Efficiency=85%

1(c)   Give the appropriate reason for-   10

       (i) Short fiber present in comber sliver

       (ii) Long fiber present in the comber waste.

1(d)   What is the amount of draft normally put in a modern lap former?   05

2(a)   Explain the combing cycle with the help of necessary diagrams.   12

2(b)   Show the differences between forward feed and backward feed.   08

2(c)   State the winding principle of a speed frame.   15

3(a)   Describe the "SKF PK–1500" drafting system for simplex.   20

3(b)   Write the functions of building motion of a simplex.   05

3(c)   A speed frame has following specifications–   10

Spindle speed= 1000 rpm

No. of spindles/frame=124

Roving hank=0.74Ne

TM=(assume)

Waste=1%

Efficiency=85%; Find out the production/frame/shift in kg.

4(a)   Briefly describe the yarn guiding device for a ring frame.   08

4(b)   Write down the forms of traveler with sketch.   07

4(c)   Establish a relation among the ring diameter, bobbin diameter and angle of pull.   10

4(d) A ring frame has following specifications:-   10
Spindle speed=(Assume)

Yarn count=20^s Ne (Hosiery)

TPI=(Assume)

No. of spindles /frame =480

Waste=2%

Efficiency =90%; Find out the production/shift/frame in lb.

SECTION-B

5(a) Make a Spin-plan for average count 30^s(k) and no. of spindles 25000 from blow room to   30
ring frame.

5(b) Write down the limitations of ring frame.   05

6(a) Define the terms:- (i) Reach and (ii) Nip. What is the basis of fixing reach in a jute   12
drawing frame?

6(b) Find the lb/spyndle from the following data: 12
Breaker card clock length=13yds

Dollop wt.=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%).

6(c) Describe a bobbin building mechanism of a jute sliver spinning frame with sketch.   11

7(a) Describe the necessities of crimping box with a neat sketch.   10

7(b) Describe a double thread spiral type jute draw frame with sketch.   15

7(c) Differentiate among 1st, 2nd and 3rd drawing frame.   10

8(a) Discuss a slip draft jute spinning machine with necessary figures.   11

8(b) Describe the twisting mechanism of jute spinning frame with sketch.   10

8(c) Find out the no. of jute spinning frame required to produce 15000kg/day of jute hessian   05
warp yarn of 8 lb/spyndle where efficiency of it is =80% (Assume all necessary
parameters).

8(d)   Calculate production/day of a jute sliver spinning frame from the following-   09

Flyer speed=4000 rpm

K-factor=12

Yarn count=10 lb/spyndle

No. of flyer =100/frame

Efficiency=80%

Waste=3%.

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KHULNA UNIVERSITY OF ENGINEERING & TECHNOLOGY
Department of Textile Engineering
B. Sc. Engineering 3rd Year 2nd Term Examination, 2016
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.

SECTION-A

1(a)   Classify the reactive dyes.   05

1(b)   Write down the mechanism of Nucleophilic addition and Nucleophilic substitution for   10
reactive dye fixation.

1(c)   Which parameters should be considered in reactive dyeing?   08

1(d)   What is hydrolysis? Which conditions are responsible for water and alkali hydrolysis in   12
reactive dyeing? Explain with chemical reaction.

2(a)   What is dispersing agent? Write down the functions of dispersing agent.   08

2(b)   Describe the mechanism of disperse dyeing with figure.   12

2(c)   Why dissolution method is necessary for naphthol in azoic dyeing? Describe the types of   08
dissolution method.

2(d)   How color is formed in azoic dyeing?   07

3(a)   What are the reasons of sulphur dyes named? Write down the properties of sulphur dyes?   07

3(b)   Which oxidation method for sulphur dyeing is more preferable between $Na_2Cr_2O_7$ and   05
H_2O_2? Explain your argument.

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

3(d)   Describe the dyeing procedure of cotton fabric with sulphur dyes including curve.   13

4(a)   How fixation of reactive printing can be carried out?   07

4(b)   What is binder? How does binder work in pigment printing? Explain with figure.   08

4(c)   Why acrylic binder is widely used than other binders?   05

4(d)   Write down the difference between base and naphtholate printing method.   05

4(e)   Write down the naphtholate printing method of azoic color on cotton fabric.   10

SECTION-B

5(a)   Why antimicrobial finish is needed for textile products? During application of   07
antimicrobial finish, which hazardous effects should be considered?

5(b)   Describe the controlled release technique of antimicrobial finishes.   10

5(c)   Write down the mechanism of cationic and anionic softener with figure.   06

5(d) What is silicone softener? "Silicone softener is compatible with polar and non-polar   12
      fibers"- Explain this statement.

6(a) What is resin finishing? How many ways resin can be applied on the textile materials?   05
6(b) Write down the application procedure of urea formaldehyde resin on the textile substrate.   12
6(c) What is calendering? Mention the parameters that affect the calendering process   08
6(d) What is embossing calendering? State the working principle of embossing calender   10
      machine.

7(a) What is soil release finish? Write down the processes of bringing soil release property in   08
      polyester fiber.
7(b) What factors influence soiling of textile materials?   10
7(c) What is meant by combustion and pyrolysis temperature?   05
7(d) How many ways can you disrupt the combustion cycle to make the flame retardant textile   12
      substrate?

8(a) What is shearing? What kind of fabrics can be processed on a shearing machine?   08
8(b) Show the schematic diagram of the sanforizing process with brief description.   12
8(c) Which factors govern the emerizing finishing quality?   07
8(d) What are the functions of pile cylinder and counter pile cylinder in raising machine?   08
      Which problems are normally created in raising for knitted fabrics?

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SECTION-A

1(a) Describe the following terms: 10

      (i) Needs, (ii) Wants and (iii) Demand

1(b) What are Marketing Mix and Customer loyalty? 10

1(c) What is product life cycle strategies? 05

1(d) Describe about the four stages of product life cycle strategies. 10

2(a) Define the terms: (i) Sense of Belonging and (ii) Z type organization 15

2(b) What is plan? Describe the types of plans. 08

2(c) Suppose you are a brand manager of Beximco group. You have launched a new knit 12
denim pant. Write a "SWOT" analysis on this newly arrived product.

3(a) What is "MOTIVATION"? Also describe the elements of motivation. 08

3(b) Describe the Maslow Hierarchy of needs theory regarding motivation. 15

      "A homeless person will not be motivated to mediate". Explain the term by motivation
theory.

3(c) What are hygiene factors? Describe the condition when a person is extremely satisfied, 12
neutral and extremely dissatisfied on the basis of ·Two- factor· theory.

4(a) What is the difference between warranties and guaranties? 05

4(b) What is BCG matrix? Describe the four basic categories of portfolio analysis. 10

4(c) Describe the five stages in the buyer decision process. 15

4(d) What is core benefit and basic product? 05

SECTION-B

5(a) What is Merchandising? Write about the activities of knit merchandiser. 15

5(b) What is visual merchandising? State the advantages of visual merchandising. 08

5(c) Write short notes on : 12

      (i) Fashion calendar (ii) TNA and (iii) Errors of visual merchandising

6(a) Write down the factors of global sourcing. Why costs of global sourcing are high? 12

6(b) What is store and non-store retailing? Write short note on the direct marketing techniques. 12

6(c) What is Kiosk? State the advantages and disadvantages of Kiosk. 11

7(a)	What is range development? How range development can be improved?	08
7(b)	What is sales forecasting? How sales forecasting can be developed?	08
7(c)	Discuss the key drivers of merchandise planning cycle.	12
7(d)	Write short note on: Product Mix.	07
8(a)	Show the methods of display.	10
8(b)	What is supply chain? Show the importance of supply chain management.	15
8(c)	Discuss the key issues of supply chain management.	10

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KHULNA UNIVERSITY OF ENGINEERING & TECHNOLOGY
Department of Textile Engineering
B. Sc. Engineering 3rd Year 2nd Term Examination, 2016
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.

SECTION-A

1(a) Sketch and label a sewing machine's needle and discuss the functions of different parts of it. 15

1(b) Why sewing needles are finished? Mention the advantages of special PD finish. 10

1(c) "Shape of needle point is important for sewing of different types of textile material"– Justify the statement very briefly. 05

1(d) Mention 10 (ten) important parts of a sewing machine. 05

2(a) Make a list of various defects found in garments. Discuss pattern defect briefly. 10

2(b) How will you identify lock stitch and chain stitch? 08

2(c) Define seam pucker. What is meant by inherent pucker? 07

2(d) Describe stitch class 100 and stitch class 300 with neat sketch 10

3(a) Mention the sewing machines used in garments factory. 05

3(b) Write the different types of fabric feed mechanism. Which system is widely used? Describe it with neat sketch. 15

3(c) Describe the features and scopes of cylinder bed and post bed of sewing machines with neat sketch. 15

4(a) Write down the features of blind stitch, bar tack and over lock sewing machines. 15

4(b) Make a list of the essential properties required for a sewing thread. 06

4(c) List out the limitations of alternative methods of joining. 05

4(d) How ultrasonic welding is used to join fabric plies? Discuss briefly. 09

SECTION-B

5(a) Describe the types of zipper. 13

5(b) Present the basic symbols of Canadian care labeling code. 07

5(c) Discuss the performance properties required from the non-textile components of an apparel. 10

5(d) Make a list of trimmings for making a basic shirt. 05

6(a) Discuss the categories of pressing. 10

6(b) Describe seam tunnel process for pressing. 10

6(c)	How pressing in a steam press is carried out?	15

7(a)	State the different folding for a shirt.	10
7(b)	Calculate the CBM of cartons with the following dimensions–	10

5000 cartons of 20inch (L) × 15inch (W) × 08inch (H) and 3000 cartons of 24inch (L) × 18inch (W) × 10inch (H).

If one vehicle can transport 26.5 CBM goods, calculate the number of vehicles required to dispatch the goods.

7(c)	One inspector took 100 pieces of shirt from a lot and marked 8 pieces sample as defective. Another inspector took 200 pieces from the same lot and marked 4 pieces as defective. Determine the comparability of the two inspectors.	10
7(d)	What is AQL?	05

8(a)	How quality of the garments manufacturing process can be controlled? Discuss briefly.	12
8(b)	Present the flowchart of garments finishing with brief description of each step.	13
8(c)	Write short notes on: (i) Button and (ii) Vel-cro.	10

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SECTION-A

1(a)	Describe about the position fixation of shedding tappet.	10
1(b)	Define inching motion and reversing motion.	05
1(c)	Define clutch. Broadly describe about the types of clutches.	10
1(d)	What is the difference between direct drive and indirect drive?	10

2(a)	What is shed? Describe different types of shed with neat sketch.	15
2(b)	What is shed geometry? Prove that warp strain reduces with the increase in shed length.	15
2(c)	What is meant by late shedding?	05

3(a)	What is Dwell period? Describe about the factors with affecting dwell of tappet.	10
3(b)	Write the scope, advantages and disadvantages of dobby shedding.	10
3(c)	Differentiate among tappet, dobby & jacquard shedding mechanism.	10
3(d)	What is bottom shaft & counter shaft?	05

4(a)	Describe about the cone under picking mechanism with neat sketch.	10
4(b)	What are the different methods of weft insertion?	05
4(c)	Describe the methods of producing various checks and stripes.	05
4(d)	Briefly discuss the S.L.S.C jacquard shedding mechanism.	15

SECTION-B

5(a)	What is guide bar? Describe the lapping movement of guide bar including both shogging and swinging motion.	15
5(b)	Write short notes on: Comb and tension rail.	05
5(c)	Show the lapping movement, chain notation and run in ratio of Sharkskin and Queenscord fabric.	15

6(a)	Write the features of typical crochet machine.	10
6(b)	Describe the types of needles used in crochet machine.	08
6(c)	Depict the knitting action of crochet machine with neat sketch.	12
6(d)	Find out the link arrangement from chain notation of satin atlas.	05

7(a) What is full width weft insertion of warp knitting machine? Also describe the full width   15
      weft insertion mechanism.

7(b) Find out the link arrangement and run in ratio of following designs: 15

(i)

          F.G.B   B.G.B

(ii)

          F.G.B   B.G.B

(iii)

          F.G.B   B.G.B
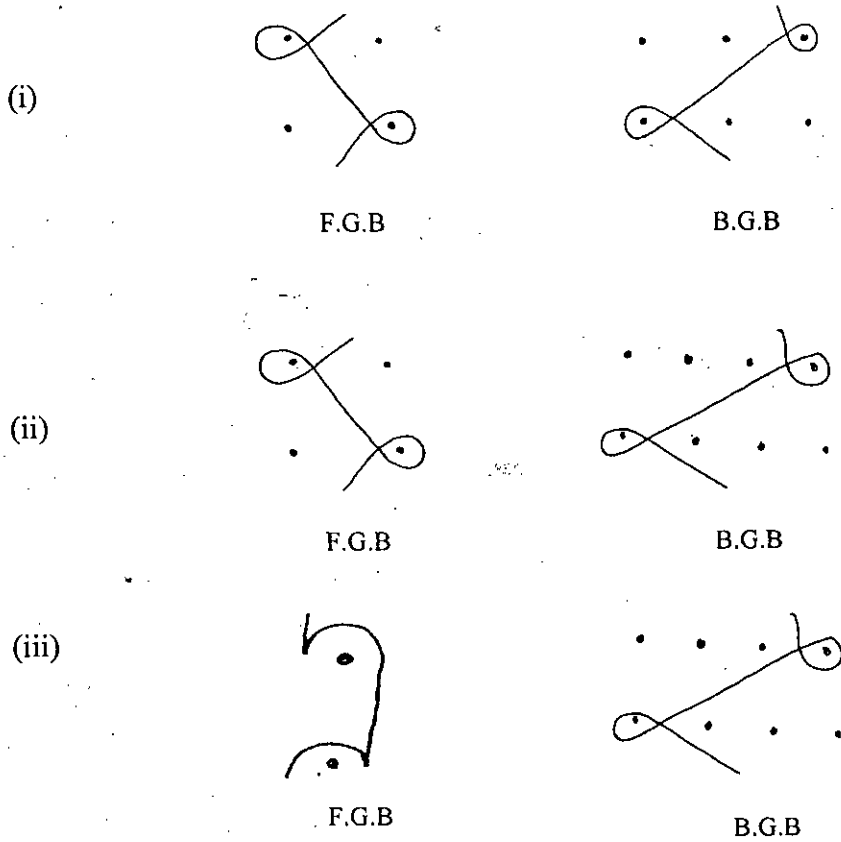
7(c) Explain swing machine and shogging motion with figure.   05

8(a) State the general rules govern ·laying-in· in warp knitting.   10
8(b) Why flange beam is used in warp knitting and cone is used in weft knitting?   10
8(c) Draw the yarn path of tricot machine.   08
8(d) How tension of warp knitting is controlled by tension rail?   04
8(e) Why many warp beams are used instead of single warp beam in warp knitting machine?   03

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