KHULNA UNIVERSITY OF ENGINEERING & TECHNOLOGY

Department of Textile Engineering

B. Sc. Engineering 3rd Year 2nd Term Examination, 2018

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)	Write down the effects of combing on yarn quality. Mention the types of comber.	09
1(b)	Describe a modern lap former with a neat sketch.	1[illegible]
1(c)	Write short note on Index wheel of a comber.	08
1(d)	State the drafting system of a comber.	06
2(a)	Make a spin plan for a modern cotton spinning mill where no. of spindles = 25000 and average yarn count = 30^s (K) hosiery.	30
2(b)	Write short notes on i) Ring Data ii) Inching motion.	05
3(a)	What are the reasons of getting long fibers in the noil of a comber?	07
3(b)	Explain working principle of comber machine with diagram.	15
3(c)	Feed/nip = 0.20'', Nips/minute = 280, No. of head = 6, Noil = 18% and efficiency = 85%. Find out the production/shift of comber when feed lap hank = 0.0096.	05
3(d)	State the degree of combing.	08
4(a)	Discuss the winding principle of a speed frame.	08
4(b)	Write down the functions of speed frame.	03
4(c)	Write short notes on i) Flyer, ii) Apron, and iii) Sliver can.	09
4(d)	Calculate the production/ shift in kg of a speed frame where roving count = 1 [illegible], Efficiency = 90% and assume all other necessary data.	05
4(e)	What is break draft? Differentiate between modern and conventional drafting system.	1[illegible]

SECTION-B

5(a)	Classify the jute draw-frame.	05
5(b)	Describe the working principle of a drawing frame with diagram.	16
5(c)	Write the features of Gardella 18-M draw frame.	05
5(d)	Write short notes on: i) Drawing, ii) Doubling, and iii) Lead%.	09
6(a)	Describe a bobbin building mechanism of a jute spinning machine.	10
6(b)	Discuss a slip draft jute spinning machine with necessary figures.	10
6(c)	State the twisting mechanism of jute spinning frame with sketch.	10
6(d)	Find out the no. of jute spinning frame required to produce 15 tons/day of jute hessian warp yarn of 8 lb/spyndle, where efficiency of it is 75% (Assume all necessary data)	05
7(a)	Differentiate among 1st, 2nd and 3rd draw frames.	07
7(b)	Describe a crimping box with a neat sketch.	12
7(c)	Define reach and nip. What is the basis of fixing reach in a jute drawing frame?	06
7(d)	Describe a push bar type jute draw frame with sketch.	10
8(a)	Write the form and size of traveller with sketch.	10
8(b)	State the technical causes of end-breakage of yarn in ring frame.	10
8(c)	Show the different types of wastes in a ring frame.	08
8(d)	A ring frame has following specifications:- Spindle speed = 18000 rpm Yarn count=30 tex TPI = 19 No. of spindles /frame = 480 Waste=2% Efficiency =90% Find out the production/shift/frame in lb.	07

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KHULNA UNIVERSITY OF ENGINEERING & TECHNOLOGY

Department of Textile Engineering

B. Sc. Engineering 3rd Year 2nd Term Examination, 2018

TE-3203

(Fabric 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)	Differentiate between tappet and cam.	05
1(b)	Describe different types of loom drive with merits and demerits.	08
1(c)	Sketch and describe the construction of shedding tappet for $\frac{1}{1}$ weave design.	12
1(d)	What are the conditions of good shedding?	05
1(e)	Find out the thrust in Newton to drive loom by using plate clutch system and conical clutch system if applied force, co-efficient of friction and acting angle are 450 N, 0.40 and 25° respectively.	05
2(a)	Is it possible to produce cross-border fabric by using an ordinary dobby? If so, how?	05
2(b)	Sketch the negative dobby shedding mechanism with proper labeling.	08
2(c)	Explain the working principle of S.L.S.C. Jacquard.	12
2(d)	Write the differences among tappet, dobby and jacquard shedding mechanism.	05
2(e)	Calculate how many looms are needed to produce $\frac{12x90}{36x30}$X58" and 6000 m fabric in 7 days when PPM is 200 and efficiency is 85%. (Assume necessary data if required)	06
3(a)	Write the causes of variation in pick spacing.	05
3(b)	Find out the picking force of a loom running at 220 PPM. The reed space of the loom is 58". Mass of the shuttle is 450 gm.	10
3(c)	What is sley eccentricity ratio? Mention the advantages and disadvantages of a high sley eccentricity ratio.	10
3(d)	Illustrate the negative let-off mechanism with figure.	10
4(a)	Mention the requirements of a positive let-off mechanism.	08
4(b)	Draw typical gearing diagram of a 5-wheel take-up mechanism and find out the picks/inch and loom constant assuming necessary data.	12
4(c)	Define automation and mention its' objectives in weaving.	07
4(d)	A beam contains 1500 yds yarn. Given that, loom speed: 220, PPI: 70, efficiency: 75%. Calculate the time required to finish the beam. (Assume necessary data if required)	08

SECTION-B

5(a)	Classify flat knitting machine.	05
5(b)	Differentiate between flat and circular knitting machine.	05
5(c)	Describe the main parts of flat bed knitting machine with neat sketch.	15
5(d)	How can you generate 2x2 Rib and Half Cardigan in flat knitting machine?	10
6(a)	What is meant by run-in ratio and racking?	09
6(b)	Describe the knitting action of chrochet machine with neat sketch.	12
6(c)	State the types of needle that are used in chrochet machine.	10
6(d)	What is miss lapping and laying-in?	05
7(a)	Sketch a heels and toe sock hosiery articles.	05
7(b)	What are the causes and remedies of needle mark and sinker mark that is generated from a circular weft knitting machine?	10
7(c)	List out the fabric faults that are occurred by manpower in a knitting floor.	10
7(d)	"Holes formation in knitted fabric occurred only from knitted yarn"- Justify the statement.	10
8(a)	Make a comparative statement between warp and weft knitted machine.	08
8(b)	Find out the following warp knitted designs with accurate lapping diagram, run-in ratio and link arrangement: i) Queens cord ii) Shark skin	10
8(c)	Discuss the main knitting parts of Raschel warp knitting machine.	10
8(d)	Define the following terms: i) Fully and partly threaded guide bar. ii) Shogging and swinging motion.	07

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KHULNA UNIVERSITY OF ENGINEERING & TECHNOLOGY

Department of Textile Engineering

B. Sc. Engineering 3rd Year 2nd Term Examination, 2018

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)	Why reactive dye is so called? Briefly describe the every parts of reactive dye structure with figure.	07
1(b)	Mention the controlling parameters in reactive dyeing. If such types of parameters are not followed, which problems can occur? Explain.	08
1(c)	Normally halogenated hetero-cyclic and vinyl sulphone reactive dyes demand sodium hydroxide and soda ash respectively for their fixation. What are the reasons for this difference? Explain with mechanism.	10
1(d)	Discuss the stripping processes of reactive dyed fabric. "Stripping process varies from dye to dye and unsatisfactory results are obtained in most cases"- Do you agree? If you agree, mention the possible reasons.	10
2(a)	Describe the technology of disperse dyeing for polyester fabric with proper curve.	10
2(b)	What is meant by gas fading of disperse dyes? How this problem can be solved?	06
2(c)	Why reduction cleaning is necessary for medium and dark shade of polyester dyeing? Explain.	10
2(d)	What are the reasons of using following agents in disperse dyeing of polyester fabric? How they perform their duties? i) Dispersing agent, ii) Levelling agent, and iii) Oligomer remover	09
3(a)	How color is formed in azoic dyeing?	05
3(b)	State the application procedure of azoic color on cotton fabrics with recipe.	10
3(c)	What is the reason of sulphur dyes named? Write down the properties of sulphur dyes.	10
3(d)	What types of problem can be created due to sulphur dyes? How it can be solved?	10
4(a)	What is meant by blends in textile sector? How many ways blended textile materials can be dyed?	06
4(b)	What points have to be considered in polyester/wool dyeing? Describe the two bath process of polyester/ wool dyeing with necessary curve and after treatment.	12
4(c)	Mention the chemicals involved in printing cellulose with reactive dyes.	05

4(d) State the three different processes of fixation for disperse dyes on polyester fabric during printing. 06

4(e) Write down the functions and composition of following auxiliaries: 06
i) Reducing agent, ii) Dye-solubilizing agent, and iii) Emulsifier

SECTION-B

5(a) Define and classify textile finishing process with examples. 06

5(b) How many ways fabric hand feel can be improved? Describe one relevant process with controlling parameters. 08

5(c) Briefly discuss the controlling parameters of calendaring. 10

5(d) Sometimes grey fabric is passed through stenter machine. State the name of the operation and explain with controlling factors. 06

5(e) Why fabric speed is an important factor during finishing? Explain with valid reasons. 05

6(a) Describe the mechanism to resist crease formation especially in cellulose fabric. 08

6(b) Write down the working procedure of swizzing calendaring with fabric passage diagram. 10

6(c) Suppose you are a finishing manager and have to give instruction to finish pink and red colored wet fabric. Which colored fabric should be finished first and why? 06

6(d) How fabric dia is controlled in stenter machine? 05

6(e) Mention the problems that may arise during raising. 06

7(a) What is meant by mercerization? Why high concentrated NaOH is necessary for mercerization? 07

7(b) Is mercerization a permanent chemical finish? Explain with valid reason. 08

7(c) Rearrange the following operations according to appropriate sequence: 05
Compacting – Stentering - Hydroextractor
Explain the reason of rearrangement for finishing.

7(d) What is sanforizing? Show the schematic diagram of the sanforizing process with brief description. 11

7(e) Define the terms: i) Parchmentization, and ii) Curing 04

8(a) Explain the mechanism of fire combustion. 10

8(b) How phosphoric acid cross links with cellulose in combustion disruption? 06

8(c) Describe the mechanism of antistatic finish. 08

8(d) Write down the necessity of antimicrobial finish in textiles. Explain with the basic requirements need for this finish. 06

8(e) Mention the factors governing soiling. 05

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KHULNA UNIVERSITY OF ENGINEERING & TECHNOLOGY

Department of Textile Engineering

B. Sc. Engineering 3rd Year 2nd Term Examination, 2018

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)	What is Demarketing? How to design a Customer Driven Marketing Strategy?	12
1(b)	Define: Product line. Briefly discuss the classification of product and services.	15
1(c)	Analyze the strategies of the following characteristics on the product life cycle: i) Competitors, ii) Customers, iii) Distribution, and iv) Sales promotion.	08
2(a)	Differentiate between price ceiling and price floor.	04
2(b)	State the elements of Branding.	04
2(c)	It costs a garments factory $50000 to make jersey. The $50000 is a fixed cost. To have the factory sell the jersey, a marketing office charges $4 for each jersey sold. If the factory charges $9 per jersey, how many jerseys should they sell to break even?	12
2(d)	Briefly discuss product mix pricing strategies.	15
3(a)	Suppose you are a brand manager of Square Group, you have launched a new jacket item. Write a "SWOT" analysis on this newly arrived product.	08
3(b)	Explain the stages involved in marketing research process in textile and clothing sector.	13
3(c)	Define promotional mix. Explain factors affecting the selection of a promotional mix.	14
4(a)	Discuss the importance and benefits of Corporate Social Responsibility to the marketing of textile companies in Bangladesh.	09
4(b)	Illustrate the framework for conducting market segmentation.	09
4(c)	Differentiate between the buying process of individual customers and institutional customers.	14
4(d)	When do consumers need more information for making buying decision?	04

SECTION-B

5(a)	Define the term 'Merchandising'. State the importance of costing in merchandising.	12
5(b)	What is fashion merchandising? Investigate the prospect of fashion merchandising in Bangladesh.	10
5(c)	"Visual merchandising can make passive lookers into active buyers"- Explain.	13
6(a)	What is a Time and Action Calendar? Formulate the role of time and action calendar towards a successful shipment.	12
6(b)	How merchandise planning can be operated? Discuss the common problems associated with merchandising planning.	13
6(c)	Describe the steps in product selection process.	10
7(a)	Define range development. How range development can be improved?	10
7(b)	What is meant by supply chain? Discuss the importance and key issues of supply chain management.	15
7(c)	Distinguish between store retailing and non-store retailing.	10
8(a)	Define sales forecasting. Discuss Delphi method for sales forecasting.	10
8(b)	What is distribution channel? Establish and explain an apparel distribution channel from manufacturer to consumer.	13
8(c)	Draw a strategic structure of how retailers add value to a product.	12

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KHULNA UNIVERSITY OF ENGINEERING & TECHNOLOGY

Department of Textile Engineering

B. Sc. Engineering 3rd Year 2nd Term Examination, 2018

TE-3203

(Fabric 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)	Differentiate between tappet and cam.	05
1(b)	Describe different types of loom drive with merits and demerits.	08
1(c)	Sketch and describe the construction of shedding tappet for $\frac{1}{1}$ weave design.	12
1(d)	What are the conditions of good shedding?	05
1(e)	Find out the thrust in Newton to drive loom by using plate clutch system and conical clutch system if applied force, co-efficient of friction and acting angle are 450 N, 0.40 and 25° respectively.	05
2(a)	Is it possible to produce cross-border fabric by using an ordinary dobby? If so, how?	04
2(b)	Sketch the negative dobby shedding mechanism with proper labeling.	08
2(c)	Explain the working principle of S.L.S.C. Jacquard.	12
2(d)	Write the differences among tappet, dobby and jacquard shedding mechanism.	05
2(e)	Calculate how many looms are needed to produce $\frac{12x90}{36x30}$X58" and 6000 m fabric in 7 days when PPM is 200 and efficiency is 85%. (Assume necessary data if required)	06
3(a)	Write the causes of variation in pick spacing.	05
3(b)	Find out the picking force of a loom running at 220 PPM. The reed space of the loom is 58". Mass of the shuttle is 450 gm.	10
3(c)	What is sley eccentricity ratio? Mention the advantages and disadvantages of a high sley eccentricity ratio.	10
3(d)	Illustrate the negative let-off mechanism with figure.	10
4(a)	Mention the requirements of a positive let-off mechanism.	08
4(b)	Draw typical gearing diagram of a 5-wheel take-up mechanism and find out the picks/ inch and loom constant assuming necessary data.	12
4(c)	Define automation and mention its' objectives in weaving.	07
4(d)	A beam contains 1500 yds yarn. Given that, loom speed: 220, PPI: 70, Efficiency: 75%. Calculate the time required to finish the beam. (Assume necessary data if required)	08

SECTION-B

5(a)	Classify flat knitting machine.	05
5(b)	Differentiate between flat and circular knitting machine.	05
5(c)	Describe the main parts of flat bed knitting machine with neat sketch.	15
5(d)	How can you generate 2x2 Rib and Half Cardigan in flat knitting machine?	10
6(a)	What is meant by run-in ratio and racking?	08
6(b)	Describe the knitting action of chrochet machine with neat sketch.	12
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7(a)	Sketch a heels and toe sock hosiery articles.	05
7(b)	What are the causes and remedies of needle mark and sinker mark that is generated from a circular weft knitting machine?	10
7(c)	List out the fabric faults that are occurred by manpower in a knitting floor.	10
7(d)	"Holes formation in knitted fabric occurred only from knitted yarn"- Justify the statement.	10
8(a)	Make a comparative statement between warp and weft knitted machine.	08
8(b)	Find out the following warp knitted designs with accurate lapping diagram, run-in ratio and link arrangement: i) Queens cord ii) Shark skin	10
8(c)	Discuss the main knitting parts of Raschel warp knitting machine.	10
8(d)	Define the following terms: i) Fully and partly threaded guide bar. ii) Shogging and swinging motion.	07

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KHULNA UNIVERSITY OF ENGINEERING & TECHNOLOGY

Department of Textile Engineering

B. Sc. Engineering 3rd Year 2nd Term Examination, 2018

IPE-3221

(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.
iii) Assume reasonable data if missing any.

SECTION-A

1(a) Define management. Write down the differences between management and administration. 10

1(b) Discuss the classical school of management. 13

1(c) What are the skills that have to be possessed by a manager? Explain. 12

2(a) Discuss project structure mentioning its advantages and disadvantages. 11

2(b) "Responsibility arises whenever authority is exercised"- Illustrate the statement. 12

2(c) Explain the steps involved in MBO process. 12

3(a) Cell phone sales for a California-based farm over the last 10 weeks are shown in the table below: 20

Week	Unit Sales
1	700
2	724
3	720
4	728
5	740
6	742
7	758
8	750
9	770
10	775

Plot the data and visually check to see whether a linear trend line would be appropriate. Determine the equation of trend line and predict sales for weeks 11 and 12.

3(b) Discuss the factors which influence the span of management. 10

3(c) Differentiate between Management Information System (MIS) and Information System (IS). 05

4(a) Differentiate between centralization and decentralization in organization structure. 10

4(b) Explain the following terms: 10

i) Cost-benefit analysis

ii) SWOT analysis

4(c) Discuss different types of business exist in Bangladesh. 15

SECTION-B

5(a) Explain Bedaux plan with necessary figure. 10

5(b) A job is rated in terms of wages Tk 900 per day. The standard time set for the job is 16 days, 8 hrs/ day. Three workers have taken 112, 120, and 140 hrs 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 Halsey plan. 15

5(c) Define job evaluation and merit rating. Differentiate between time wages and real wages. 10

6(a) Describe seven basic tools of TQM with figure. 14

6(b) Describe eight pillars of TPM. 11

6(c) Describe basic organizational structure of quality circle. 10

7(a) Write down the qualities of a leader. Differentiate between a leader and a manager. 11

7(b) Define group dynamics. Explain Hawthrone experiment regarding human nature and attitude. 12

7(c) Define layoff and discharge. Discuss expectancy theory of motivation. 12

8(a) How can job rotation improve employee performance? Define job enrichment and enlargement with example. 10

8(b) What is meant by BGMEA? What are the activities of BKMEA? 12

8(c) What is the role of ISO? Write down quality management principle of ISO 9001. 13

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KHULNA UNIVERSITY OF ENGINEERING & TECHNOLOGY

Department of Textile Engineering

B. Sc. Engineering 3rd Year 2nd Term Examination, 2018

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)	What is sewing needle finish? Write down the advantages of Cool-SEW and Special PD finish.	10
1(b)	Why sewing thread consumption varies according to stitch classes? Between single thread chain stitch and lock stitch, whose thread consumption is more and why?	10
1(c)	Describe the mechanism of lock stitch formation with necessary sketches. (Use maximum 06 sketches)	15
2(a)	What is seam? Describe the different classes of seam according to BS 3870-2:1990.	17
2(b)	Why various feed mechanisms are used in sewing machines? Differentiate between adjustable top feed mechanism and differential bottom feed mechanism.	12
2(c)	What are the functions of folder and compensating foot in a sewing room?	06
3(a)	Show the schematic diagram of a sewing machine.	08
3(b)	Sketch the commonly used sewing machine beds and mention their specifications.	12
3(c)	Compare stitch class 300 and stitch class 400.	10
3(d)	State the causes and remedies of seam puckering.	05
4(a)	Make a list of the sewing machines generally used in a garment factory.	05
4(b)	Discuss the types of cotton sewing threads.	05
4(c)	Explain the parameters which are considered to access the quality of a sewing thread.	15
4(d)	What is meant by seam pucker? Define inherent pucker and tension pucker.	10

SECTION-B

5(a)	Review the reasons behind the increasing usage of 'Alternative methods of joining fabric' at present times.	07
5(b)	Demonstrate the 'Ultrasonic Welding' method with neat sketch.	15
5(c)	Investigate the feasibility and difficulty using adhesive for joining fabric.	08
5(d)	Verify which method is preferable to create a definite shape of a garment amongst the alternative methods of joining fabric.	07
6(a)	What is permanent press?	05
6(b)	Generate a process flow of garment pressing using steam air tunnel.	10
6(c)	Point out different pressing faults with probable causes and remedies.	12
6(d)	Explain-"Pressing is the final production stage".	08
7(a)	Depict the production process of buttons.	13
7(b)	Sketch and describe different parts of an open ended zipper.	10
7(c)	What is wadding? Write about different types of wadding.	07
7(d)	Elaborate the following care label signs:	05

i)  ii)  iii)  iv)  v) 

8(a)	"The quality of garments depends on quality of trims"- Do you agree? Justify your opinion.	07
8(b)	Illustrate the steps of the standard folding of a half-sleeve shirt.	10
8(c)	Write down the functions of a export carton.	07
8(d)	Why shipping mark is used in carton? Mention the contents of a shipping mark.	06
8(e)	Sketch the X-sectional view of 3-ply and 7-ply cartons.	05

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