

BANGLADESH UNIVERSITY OF TEXTILES

B. Sc. in Textile Engineering
Level-3 Term-II, Final Examination-2013

Subject: Apparel Manufacturing-II (Code: AME 353)

Full Marks: 105

Time: 3.00 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) Define the term technical design and creative design.
(b) Show and discuss the sequences of a new product development process.
(c) Write notes on:
(i) Development sample (ii) Fit sample (iii) Size set sample (iv) Counter sample (v) P. P. sample. $[2+5.5+(5 \times 2)=17.5]$
2. (a) Explain the term Operator's Rating- 100.
(b) Write down the features of progressive bundle system along with their merits and demerits.
(c) Differentiate between synchro-system and unit production system for apparel manufacturing.
(d) Write about the causes of low productivity in apparel production. $[2+7+4+4.5=17.5]$
3. (a) Define work study. State the basic procedures of work study.
(b) Mention the criteria of good line balancing.
(c) Define productivity. What are the suggested productivity measurement system for Apparel Industry?
(d) Mention the importance of cutting room management and discuss the factors which affect cutting quantity. $[5+3+4.5+5=17.5]$
4. (a) What is meant by inspection? Discuss on cause and effect diagrams.
(b) Explain the term - 'In-Process Inspection' for apparel manufacturing.
(c) Discuss on material handling.
(d) Write about plant layout. $[4.5+5+3+5=17.5]$

Part: B

(Answer any three questions)

5. (a) Define apparel washing with mentioning it's importance.
(b) Discuss the procedure of bleach washing for denim apparels.
(c) Discuss the procedure of apparel dyeing with hot brand reactive dyes.
(d) Write down the advantages of apparel dyeing. $[3+6+6+2.5=17.5]$
6. (a) Explain the term material management.
(b) Make a list of special apparels. State heat protective clothing.
(c) What is clothing comfort?
(d) Discuss briefly about the loss of heat by conduction process. $[4+6+4+3.5=17.5]$
7. (a) What is costing? Discuss about the elements of cost sheet.
(b) Define the term FOB.
(c) What are the objectives of testing apparel?
(d) Point out and discuss the quality parameters of sewing thread. $[6+2+3.5+6=17.5]$
8. (a) Discuss the causes of seam puckering with their remedies.
(b) Write the procedure of seam strength test of apparel.
(c) Explain the mechanism of balancing heat from human body. $[6+6+5.5=17.5]$

**(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) State the functions of production planning and control with advantages.
(b) Write down the features of unit production system with merits and demerits.
(c) Discuss the responsibilities of a cutting room manager in an apparel industry.
(d) Why progressive bundle system is popular in Bangladesh? Explain.

[5+5+4+3.5=17.5]

- ✓ 2. (a) Define: (i) Costing (ii) Bottleneck (iii) FOB (vi) Method study
(b) Prepare a cost sheet for 10,000 dozen T-shirt. (Assume all necessary parameters).
(c) Mention the benefits of work study in apparel industry.

[4+11+2.5=17.5]

- ✓ 3. (a) What is apparel dyeing? Discuss cotton apparel dyeing process with suitable dyestuffs.
(b) What is enzyme wash? Discuss the process of enzyme wash.
(c) Mention the precautions that should be taken before apparel dyeing.
(d) Why the demand of washed apparels and dyed apparels are increasing? Explain.

[6+5.5+3+3=17.5]

4. (a) What is productivity? Discuss the factors of productivity in apparel industry.
(b) What is line balancing? Mention the layout and line balancing of T-shirt.
(c) What is WIP? How it influences on apparel production?
(d) Mention the requirements of apparel washing.

[7+5+3+2.5=17.5]

Part: B

(Answer any three questions)

- ✓ 5. (a) What is special clothing? Discuss briefly about the flame resistance clothing with its application.
(b) What is fashion? State fashion cycle with figure.
(c) Write short notes on:
(i) Racing driver clothing (ii) Zirpro finishing.
(d) Mention the advantages of inventory control.

[5+6+4+2.5=17.5]

- ✓ 6. (a) What is inventory management? Describe the functions of the inventory management in apparel industry.
(b) Discuss briefly about the loss of heat from human body by radiation method.
(c) What is final inspection? Write about AQL in final inspection.

[6+5+6.5=17.5]

7. (a) What is seam preparation? Describe the procedure of seam strength test.
(b) Differentiate between traditional apparel and fashionable apparel.
(c) How to assess the sew ability of a fabric?
(d) Why seam strength is important?

[8+3+4.5+2=17.5]

- ✓ 8. (a) Explain the process of heat loss through clothing by radiation method from human body.
(b) Define the following terms:
(i) Fashion leader and (ii) Fashion followers
(c) Show the inspection loop and discuss.
(d) Write about the applications of protective clothing.

[5+3+5+4.5=17.5]

BANGLADESH UNIVERSITY OF TEXTILES

B. Sc. in Textile Engineering

Level-3 Term-II, Final Examination-2015

Subject: Apparel Manufacturing-II (Code: AME 353)

Time: 3.00Hrs.

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) State the requirements of Apparel Dyeing.
(b) Discuss the entire process of stone wash on Denim apparels.
(c) State the basic theory of apparel dyeing and also discuss the dyeing process of cold brand reactive dyes with suitable garments.
(d) "Apparel washing is a new Technology" Explain it. **[2.5+5+7+3=17.5]**
2. (a) Discuss about store layout process.
(b) What is clothing? Describe the heat loss from human body through clothing by conduction method.
(c) Discuss the inspection procedure of sewing thread. **[6+6+5.5=17.5]**
3. (a) What is seam pucker? State the different causes of seam pucker.
(b) What is abrasion resistance of a seam? Discuss it's different factors.
(c) What is Acceptance Sampling? Mention the Inspection check list for shirts. **[6+5.5+6=17.5]**
4. (a) Define store and storekeeping. Mention the aims and purpose of store keeping.
(b) Discuss about various types of inventory system.
(c) Write a short note on fire fighters suit. **[6+7+4.5=17.5]**

Part: B

(Answer any three questions)

5. (a) What is time study? Discuss the steps of improving productivity.
(b) State the measurement of productivity. Mention the relation between productivity and production. **[9+8.5=17.5]**
6. (a) Define cutting room management. Mention different activities in cutting room of apparel industry.
(b) Discuss the job responsibilities of cutting room manager.
(c) Broadly discuss the effects and functions of production planning and control. **[4.5+5+8=17.5]**
7. (a) What is line layout plan? Briefly discuss about how line balancing is done in apparel industry.
(b) Discuss about the different inspection system in apparel industry.
(c) Describe the seven wastages in apparel production. **[4.5+5+8=17.5]**
8. (a) Define Direct cost and indirect cost with example.
(b) Prepare a cast sheet of 100000 pcs of full sleeve ladies polo shirt (Assume all necessary particulars)
(c) Write a short note on variables of productivity. **[7+6+4.8=17.5]**

[4+8+5.5=17.5]

BANGLADESH UNIVERSITY OF TEXTILES

B. Sc. in Textile Engineering

Level-3 Term-II, Final Examination-2016

Subject: Apparel Manufacturing-II (Code: AME 353)

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) What are the different apparel production system? Define them.
(b) Distinguish between Unit Production System (UPS) and Progressive Bundle System (PBS) of apparel production.
(c) Discuss the competitive advantage of Japanese Toyota System (JTS) in case of bangladeshi apparel industry.
(d) Criticize on existing straight line apparel production system in context of Bangladeshi industries. Also suggest remedies. [2.5+4+5+6=17.5]
2. (a) Define productivity in context of textiles and apparel industry.
(b) There are many areas in the cutting room where potential saving is possible. Discuss the above statement.
(c) How you will control the material wastage and product costs of a RMG industry?
(d) Point out the causes of low productivity in the apparel industry along with suggestions to improve productivity. [2.5+4+6+5=17.5]
3. (a) What is Line Balancing?
(b) Briefly explain the responsibilities of a cutting room manager.
(c) List down the ways of improving productivity.
(d) What are the factors of productivity? [2.5+6+5+4=17.5]
4. (a) Briefly explain the cutting room flow process.
(b) Show a line layout for a basic T-Shirt.
(c) Summarize the objectives of line balancing.
(d) What are the tools of work study? [2.5+6+5+4=17.5]

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[5+5+4+3.5=17.5]

Part : B

(Answer any three questions)

5. (a) What do you mean by AQL?
(b) Discuss in-process inspection for Apparel Manufacturing.
(c) Mention the advantages of garments dyeing.
(d) Write about inspection loop. [2+7+5+3.5=17.5]
6. (a) Briefly explain single sampling plan.
(b) Summarize the defects occurred during finishing a garments.
(c) Write short note on bullet proof jacket.
(d) Why is special clothing important? [2.5+3.5+6+3=17.5]
7. (a) Point out the changes occurred in apparel due to washing.
(b) State the action of enzymes with denim fabric during enzyme wash.
(c) Washing technology provides the best washed looked/touch for a garment. Explain the above statement.
(d) Discuss the typical procedure of stone- enzyme wash for a batch of 80 kg denim long pant. [5+3.5+6+3=17.5]
8. (a) Mention the general properties required for protective textiles and apparels.
(b) Industry need sophisticated and advanced technology to manufacture value added special apparels. Explain the above statement.
(c) Write down the special features for below apparel products (i) Fire Fighter cloth (ii) Medical textiles and apparels (iii) Sport wear (iv) Water and wind proof cloth (v) Breathable fabrics. [2.5+3+5+7=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) What are the 5M's of material Management? Write about the phases of material management.
(b) What is meant by Vendor Rating? Write about its factors.
(c) How is inventory and supply chain management linked up with each other? Justify your logics.
(d) With the help of graphical representation, show the relationship between different costs involved with the EOQ model. [4+5+5+3.5=17.5]
- ✓ 2. (a) Write down a brief note about special apparel and also make a list of special apparel and textiles.
(b) Mention the features of heat and flame resistant clothing focusing on their functional aspects.
(c) What do you mean by layered clothing? How many layers are generally present in layered clothing? Briefly explain them on the basis of their functionality.
(d) What are the ways to get rid of back-staining problem. [4+5+5+3.5=17.5]
3. (a) Make a list of the faults that appear during final inspection in a garment industry.
(b) Write down the causes and preventive measures of the following faults:
i) Seam puckering (ii) Size defects (iii) Workmanship defects.
(c) Assume AQL is 2.5% and lot size is 69,000 garments. Find out from single sampling plan the following :
i) Allowed number of samples to be inspected.
ii) What alphabet represents this lot size?
iii) If the number of defects appearing is 15, decide whether the lot will be accepted or rejected.
[Take assistance from the two attached Tables related to AQL] [4+5+5+3.5=17.5]
- ✓ 4. (a) What type of general tests are required for order processing of a style in a garment factory?
(b) Explain the working procedure of fabric strength testing.
(c) Discuss briefly about the 4-point system of fabric inspection.
(d) Assume that, 120 yds of a cotton polyester blended woven fabric were inspected where a total of 32 defects appeared, among which 15 defects of length between 1 inch to 3 inch each, 9 defects of length between 6 inch to 9 inch each, and 8 defective holes measuring diameter of 0.1 inch to 1.0 inch were found. If width of the fabric is 56 inch, decide whether the fabric will be accepted or rejected. [3+7.5+7=17.5]

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Part : B

[4+5+3.5+5=17.5]

(Answer any three questions)

- ✓ 5. (a) Write down the names of garment production systems. Compare among them.
(b) Define the following terms :
i) Numbering (ii) FOB and (iii) Bundling
(c) "PBS is the mostly used production system in Bangladesh". Explain. [5+6+6.5=17.5]
6. (a) What are the main types of layout plan? Briefly describe a garment sewing line layout.
(b) Describe the six causes of apparel industry's low productivity.
(c) How can you reduce the line setting time and improve line balancing to increase productivity of sewing floor. [5+6+6.5=17.5]
- ✓ 7. (a) Define costing and calculate the FOB price for a polo shirt.
(b) Discuss in details the main factors of method study.
(c) Define work measurement and explain the techniques of work measurement. [5+6+6.5=17.5]
- ✓ 8. (a) Mention the benefits and limitations of apparel dyeing.
(b) State the basic theory of apparel dyeing and also describe the dyeing process of bi-functional reactive dyes for suitable garments.
(c) Write down short notes on :
i) Dip dyeing (ii) Over-dyeing. [5.5+6+6=17.5]

[4+7.5+6=17.5]

B. Sc. in Textile Engineering
Level-3 Term-II, Final Examination-2017

Subject: Apparel Manufacturing-II (Code: AE 309)

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) What are the different apparel production systems? Define them.
(b) Describe about the whole apparel production system with advantages and disadvantages.
(c) Write short notes on Unit Production System (UPS) and Modular Production System (MPS).
(d) Criticize on existing straight line apparel production system in context of Bangladeshi industries. Also suggest remedies.

[3+4+4+6.5=17.5]

2. (a) Why cutting room management is important in apparel industry?
(b) Specify some functions of material management.
(c) Write a short note on inventory control.
(d) Briefly discuss about reasons for keeping inventory.

[2.5+4+4+7=17.5]

3. (a) Write down the flow process of apparel washing.
(b) Distinguish between enzyme wash and bleach wash.
(c) How enzyme works towards the denim garments for creating color fading effect?
(d) Discuss the typical procedure of acid wash for a batch of 70 Kg denim long pant.

[2.5+4+4+7=17.5]

4. (a) Mention the objectives of super white wash.
(b) What are the advantages and disadvantages of sand blasting?
(c) Write a short note on following dry processes:
(i) PP Spray (ii) Whiskering (iii) Overall Wrinkling (iv) Destruction.

[2.5+3+(4×3)=17.5]

Part: B
(Answer any three questions)

5. (a) Define apparel dyeing. Write the advantages of apparel dyeing.
(b) Explain the precautions to be taken in the selection of buttons, sewing threads and elastic for garment dyeing.
(c) Throw light on the special qualities of interlining used in garments to be dyed after garments manufacturing.
(d) Describe the garments dyeing procedure by direct dyes.

[4+6+3+4.5=17.5]

6. (a) What are the technologies used in apparel dyeing?
(b) Differentiate between hot brand and cold brand reaction dye.
(c) Compare between tinning and over dyeing.
(d) Discuss about the typical procedure of stripping in case of apparel dyeing with vat and reactive dye.

[2.5+4+5+6=17.5]

7. (a) Point out the special functions of sportswear clothing.
(b) What are types of water proof breathable fabric? Write the features of micro porous membrane with schematic diagram.
(c) Write short description on Bullet proof jacket and thermal clothing.
(d) State the function of different layers of Chemical protective clothing briefly.

[4+5+5+3.5=17.5]

8. (a) Define antimicrobial finish. Name the apparel products amenable to antimicrobial finishes.
(b) Write briefly the necessity and requirements of antimicrobial finish.
(c) Mention and discuss the raw materials and manufacturing steps of fire fighter suit.
(d) Write briefly about racing car driver's suite.

[5+4+4+4.5=17.5]

Time: 3.0 Hrs.

Full Marks: 72

(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 do you mean by vendor rating? Name the techniques available for vendor rating and justify which one is better for garments business.
(b) Write down the basic EOQ model for inventory management of an apparel industry and show how the curve behaves with respect to different costs incurred.

$$[6+6=12]$$

2. (a) Narrate the flow chart of operation in a cutting room.
(b) What points shall a cutting room manager consider while opting for cutting techniques?
(c) Define cut-order plan. Show the cut-order plan with the help of a table considering a cutting quantity of 10000 pieces segregated in the size ration of 1:3:2:1.

$$[4+4+4=12]$$

3. (a) State the causes and preventive measures of Laddering problems and Seam Puckering defects in garments with necessary diagrams.

(b) What do you mean by AQL? Write down a typical procedure of final inspection implementing single sampling AQL method (assume all necessary parameters).

(c) What precautions are required to be taken before garments dyeing?

4 (a) Distinguish between nucleic acids and proteins. [4+4+4=12]

4. (a) Distinguish between work study and work measurement.
(b) Suppose for ABC sewing line of an RMG industry, Operators = 35, Working hours = 8, Efficiency = 65%, Absent = 5%, SMV/Garment = 15. Determine the line target production.
(c) Discuss the basic theory and standard procedure of apparel dyeing with cold brand reactive dye.

$$[3+4+5=12]$$

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(Answer any three questions)

5. (a) Point out the requirements of apparel washing.
(b) State the action of Pumice stone with denim fabric during stone wash.
(c) Discuss the typical procedure of stone-enzyme wash for a batch of 70kg denim pant with standard recipe.

$$[3+3+6=12]$$

- 6.) (a) Mention the objects of pigments washing. [3+3+6=12]
(b) Distinguish between PP spray and PP sponging dry process of apparel washing.
(c) Write short notes on the following: (i) Whiskering (ii) Laser finish (iii) Grinding.

$$[3+3+(3\times 2)=12]$$

7. (a) Write short notes on: Clothing comfort, Tog value and Goretex. [3+3+(3x2)]
(b) Explain briefly on how heat is lost from human body by perspiration and respiration.
(c) Narrate a summary about heat and flame resistant clothing.

$$[4+4+4=12]$$

- Q. (a) Mention the expected special properties required for water proof breathable fabrics. [4+4+4=12]
(b) Write short note on Bulletproof vest.
(c) Write down the special features for below apparel products (i) UV-Protective Textiles (ii) Water and wind proof cloth (iii) Chemical protective apparels.