

The Open University of Sri Lanka  
Department of Textile and Apparel Technology  
Post-Graduate Diploma in Technology / Master of Technology  
Final Examination - 2012/2013  
TTX7131 - Apparel Manufacturing Technology  
Duration- 3 Hours



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Date: 5<sup>th</sup> August 2013

Time: 0930-1230 hours

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Total number of questions = 07

Number of questions to be answered = 05

Marks for each part are indicated at the end of the question. Use separate sheets to answer for these questions.

Q1.(a) Suppose you are assigned to develop a new fashionable blouse for next summer season.

Explain how do you develop this product through the main three adoption phases. You may consider the various tasks involved at each phase. (9 marks)

(b) What is meant by the term "Supply chain" for the apparel industry? Briefly explain why the effective supply chain is essential today to further development of apparel industry in Sri Lanka. (5 marks)

(c) Briefly explain any three (03) barriers faced by Sri Lankan apparel manufactures to deliver the orders on time. (6 marks)

Q2.(a) KLM Lanka (Pvt) Ltd has a production line of 20 operators, who work for 8 hours per day. The plant efficiency is 85%. Factory received an order of 10,000 ladies blouses with a lead time of 10 days. Factory has required human resources and machinery to complete the order. Blouse style has a production time of 6 SMV and plant has 600 hours of committed capacity for 10 days.

(i) Calculate potential capacity for 10 working days in the production line.

(ii) What is the required capacity to complete the order?

(iii) What is the available capacity of the production line?

(iv) Determine the whether you accept/reject the order and give the reasons for your answer. (16 marks)

(b) Briefly explain how the cutting cost and end waste cost vary with the marker length.

You may use a suitable diagram for the explanation. (4 marks)

Q3.(a) Quality of a seam is affected by two factors. Briefly explain how those two(02) factors would affect on the seam quality. You may give suitable examples for each of these two factors. (6 marks)

(b) "Welding of garment parts gives comparatively many advantages over the conventional sewing process, but, it has certain limitations for the fabrics that are used for welding". Justify this statement with giving suitable examples. (6 marks)

(c) Moulding process depends on several parameters. Select three (03) of them and explain why those factors are important for the moulding process and how those factors affect on moulding process. You may use a suitable diagram to answer this question. (8 marks)

Q4.(a) "Progressive bundle production system is more preferred than the conventional bundle system in apparel manufacturing. But, it has certain disadvantages as well". Briefly Explain this statement with giving reasons and suitable examples. (8 marks)

(b) "Module production system is much more suitable for present environment in Sri Lankan apparel industry". Justify this statement with giving reasons. (8 marks)

(c) Garment washing can be done as wet processing and dry processing. Select an example for each of these processing methods and briefly explain them. (4 marks)

**Q5.(a)** Needle heating is one of the main problem faced during stitching synthetic materials and depends on many parameters. Select two (02) variations of each of the following parameters and briefly explain their effect on the needle heating problem. You may use suitable graphs to answer this question.

(i) Sewing thread related parameters                      (ii) Fabric related parameters                      (8 marks)

**(b)** Needle penetration force may reduce the quality of sewing. Fabric and needle parameters are significantly affecting for this. Select any (02) variations of following factors and briefly explain their effects on the variations of needle penetration force. You may use suitable graphs when answering this question.

(i) Needle related parameters                      (ii) Fabric related parameters                      (8 marks)

**(c)** Briefly explain how do you measure the possibility of damaging the fabric during sewing using "Sewability tester".                      (4 marks)

**Q6.(a)** How do the smart textiles and clothing differ from the normal textiles? Differentiate three (03) types of smart materials as active passive and very smart.                      (8 marks)

**(b)** Today, there are many technologies developed for manufacturing thermally sensitive clothing. Give any three (03) such technologies and briefly explain how they can provide the thermal sensitiveness for clothing.                      (6 marks)

**(c)** What do you mean by "Textile scaffolds" ? Briefly explain two (02) applications where we can use these textile scaffolds.                      (6 marks)

**Q7. (a)** Briefly explain the concept of nano technology and how electro spinning can be used to produce nano fibres. You may use a schematic diagram to explain this.                      (12 marks)

**(b)** Briefly explain any four (04) applications of nano technology in various fields. (8 marks)