

The Open University of Sri Lanka
Department of Textile and Apparel Technology
Bachelor of Technology / Industrial Studies
Final Examination - 2011/2012
TTX6135 - Textile Product Engineering
Duration - 3 Hours



Date: 17th March 2012

Time: 1400-1700hrs

Total number of questions: 08

Answer only six (06) Questions. All questions carry equal marks.

- Q1. (a) If you are assigned to develop a new style of garments for the summer of 2013, what phases would you include in your development process and what activities will be performed under each of these phases? (30 marks)
- (b) Why is it necessary to schedule the product development activities properly? During scheduling of activities, name the method of scheduling that you would recommend? Give the reasons for your answer. (40 marks)
- (c) What is meant by the term "strategic design" with reference to a production organization? In the strategic design, one goal is to find the ways of expanding the business. Explain the possible directions for this goal. (30 marks)
- Q2. (a) In order to produce a commodity to satisfy the needs of the customer, it is important to get the views of the potential customers. Briefly explain four (04) methods by which customer views could be obtained. (20 marks)
- (b) (i) Why is the "Design driver" concept important in product development process? Briefly explain the two (02) methods that are often effective in searching of novel product ideas. (30 marks)
- ii) Give a design driver for a mobile phone. (10 marks)
- (c) What do you understand by "Product concept"? Explain the different ways by which a product concept could be described. Give the advantages and disadvantages of each of them. (40 marks)

- Q3. (a)** In designing a product, "Professional design" is one of the methods followed. What do you understand by professional design and briefly explain three (03) styles for design a product using professional design method giving the principles and realization each of these styles. (50 marks)
- (b)** Explain the importance of collective design with respect to apparel product designing. (20 marks)
- (c)** Briefly explain methods by which collective design can be done in apparel product designing. (30 marks)
- Q4. (a)** "The evaluation of a design proposal is of utmost important, before the production begins". Justify this statement giving reasons. (20 marks)
- (b)** Briefly explain the procedure for having an effective evaluation of design proposal. You may consider the cost benefit analysis technique. (40 marks)
- (c)** Why is market testing important in product design evaluation? Briefly explain a method of market testing for a apparel product. (40 marks)
- Q5. (a)** Differentiate "Value engineering" and "Value analysis" processes. (20 marks)
- (b)** Briefly explain the phases/steps involved in value engineering and value analysis processes. (40 marks)
- (c)** Why is "Functional Analysis System Technique (FAST)" important in developing a product? Compare technical FAST and customer FAST. (40 marks)
- Q6. (a)** Why is "design to cost" important in developing a product? Briefly explain any four (04) elements that are involved in design to cost approach. (40 marks)
- (b)** What is "target costing"? Briefly explain how you could practice target costing concepts in product development. (40 marks)
- (c)** What is "life cycle cost of a product"? Briefly explain why it is important in product development. (20 marks)

Q7. (a) Risk minimizing is an important task for any production organisation. With the help of a suitable diagram explain how you could minimize risk.

(30 marks)

(b) In risk management, risk assessment and risk control stages must be followed. Briefly explain the elements included in each of these stages.

(30 marks)

(c) Explain the importance of considering ethics in engineering design. Give an example to show the consequences of ignoring ethics in engineering design.

(40 marks)

Q8. (a) What do understand by term "Green engineering"? Briefly explain why is this concept is important to be considered in product engineering in today's context.

(30marks)

(b) Briefly explain how you could achieve economical benefits through the goals of Green engineering.

(30 marks)

(c) Briefly explain four (04) options available for you as a product engineer to develop an environmental friendly textile material.

(40 marks)