

THE OPEN UNIVERSITY OF SRI LANKA
 DEPARTMENT OF TEXTILE AND APPAREL TECHNOLOGY
 POST GRADUATE DIPLOMA IN TECHNOLOGY/
 APPAREL PRODUCTION AND MANAGEMENT
 FINAL EXAMINATION– 2015/2016
 TTX7140 – HUMAN FACTORS ENGINEERING
 DURATION – 03 HOURS



Date: 27th November 2016

Time: 0930 - 1230 hrs

Total number of questions = 07

Number of questions to be answered = 05

Each question carries equal marks.

- (Q1) (a) Briefly explain the major elements of a work system. (06 marks)
- (b) Giving suitable examples, briefly explain the skill levels required for the most commonly used work systems in the apparel Industry. (06 marks)
- (c) Describe the dynamic nature of apparel industry and explain how the workers in apparel industry face the challenges, which may occur due to dynamic nature that you have described. (08 marks)
- (Q2) (a) Describe four (04) phases of the biological activities of human being, which must be considered when designing the work. (08 marks)
- (b) With respect to division of labour, briefly explain the historical developments of the production systems used in the apparel industry. (08 marks)
- (c) Compare and contrast characteristics of present day tools and machines against the traditional tools and machines. (04 marks)
- (Q3) (a) What are cumulative trauma disorders? (02 marks)
- (b) Classify cumulative trauma disorders using the parts of a human body. (04 marks)

- (c) Write a short note on the occupational risk factors, which may lead to occur cumulative trauma disorders at work place. (06 marks)
- (d) Briefly explain the methods, which can be used for the prevention of cumulative trauma disorders at work places. (08 marks)
- (Q4) (a) Giving important factors, explain why shift work is widely practiced in manufacturing industries. (06 marks)
- (b) Giving examples justify the statement "Shift work negatively affects the social and domestic life style of the employees". (08 marks)
- (c) Briefly explain the factors, which affect the physical work capacity of the employees. (06 marks)
- (Q5) (a) Describe the factors, which contribute to the thermal stress at work places. (05 marks)
- (b) Briefly explain how you design the visual environment of a work place ergonomically. (05 marks)
- (c) Giving suitable examples, describe how the exposure to higher level of vibration affects the health of workers. (05 marks)
- (d) Explain the different techniques, which can used to control the noise at work places. (05 marks)
- (Q6) (a) Giving examples, explain why garment manufacturing process still remains as a labour intensive industry. (10 marks)
- (b) Write a comprehensive note on the use of anthropometric tables for designing tools, equipment and machines. You should include suitable examples in your answer. (10 marks)
- (Q7) (a) Write a comprehensive note on the applications of seated work places and standing work places. (08 marks)
- (b) Briefly explain the ergonomic factors you should consider when selecting sewing machines. (08 marks)
- (c) Briefly explain the importance of using correct displays and controls in machine designing. (04 marks)