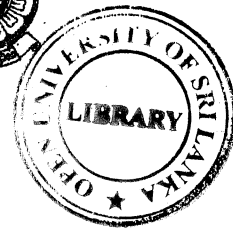


THE OPEN UNIVERSITY OF SRI LANKA  
 DEPARTMENT OF TEXTILE AND APPAREL TECHNOLOGY  
 BACHELOR OF INDUSTRIAL STUDIES  
 TTX5136 - ERGONOMICS FOR TEXTILE AND APPAREL INDUSTRY  
 FINAL EXAMINATION - 2007/2008  
 DURATION: THREE (03) HOURS



DATE: 14<sup>th</sup> May 2008

TIME: 0930 TO 1230 HOURS

Total number of questions = 09

Number of questions to be answered = 06

Answer question one (Q1), which is compulsory and five (05) more questions.

Question one (Q1) carries 25 marks and questions two (Q2) to nine (Q9) carry fifteen (15) marks each.

**Compulsory Question**

- (Q1) (a) Define the term human cognition. (03 marks)  
 (b) Briefly explain the two (02) phases of the personal selection. (04 marks)  
 (c) List two (02) techniques that can be used for the selection process of employees. (02 marks)  
 (d) Write down four (04) causes that could lead to work place stress. (04 marks)  
 (e) What do you understand by stress and fatigue? (03 marks)  
 (f) Write down two (02) forms of vibration. (02 marks)  
 (g) What do you understand by the term "occupational illness"? (03 marks)  
 (h) List two (02) basic components of physical fitness. (02 marks)  
 (i) State two (02) methods of controlling the noise at a work place. (02 marks)

**Answer any five (05) questions from the following eight (08) questions**

- (Q2) (a) What are the goals of ergonomics? (03 marks)  
 (b) What factors should be considered in order to achieve the goals of ergonomics? (03 marks)  
 (c) Write a comprehensive note on the benefits of the ergonomics. (09 marks)
- (Q3) Write a comprehensive note on the use of anthropometry in designing of work places and tools. (15 marks)

- (Q4) (a) Giving examples, briefly discuss the main study areas of ergonomics. (09 marks)
- (b) Muscular skeletal disorder hazards mainly occur due to the awkward posture. Giving suitable examples discuss the statement. (06 marks)
- (Q5) (a) Write a short note on "**favourable thermal conditions**" of a sewing department in a Sri Lankan garment factory. (06 marks)
- (b) Briefly describe, what design aspects should be considered, when selecting **sewing machines** and **chairs** for a sewing work station. (09 marks)
- (Q6) (a) What is the audible frequency range for humans? (02 marks)
- (b) Write down the human hearing perception threshold and the pain threshold. (04 marks)
- (c) A worker operates in section A, which has a sound level of **80 dBA** for **04 hours** and then he is exposed to a sound level of **90 dBA** in section B for **03 hours**. Determine whether the operator is at risk or not. (09 marks)
- (Q7) Write short notes on followings.
- (a) Human performance technology
- (b) Job satisfaction and productivity
- (c) Management styles (15 marks)
- (Q8) (a) What are the three (03) shift schedules, that are widely used in the production floor? (03 marks)
- (b) Compare those shift schedules in all aspects. (06 marks)
- (c) What factors must be considered, when selecting workers for the night shifts? (06 marks)
- (Q9) Clothing comfort is important for the workers to perform their tasks effectively and efficiently. Explain how the clothing creates comfort to the wearer. (You could use the concept of microclimate to answer for this question) (15 marks)