

THE OPEN UNIVERSITY OF SRI LANKA  
 POST GRADUATE DIPLOMA IN TECHNOLOGY  
 FINAL EXAMINATION -2011 / 2012  
 TTM7138 Quality Management  
 Duration: Three (3) hours



Date: 4<sup>th</sup> March 2012

Time: 0930-1230 Hours

Number of questions to be answered = 06

Answer Question No. 1, which is compulsory, and five (05) additional questions.  
 Question 1 carries thirty (30) marks and questions 2 to 08 carry fourteen (14) marks each

1. (a) What are the additional activities involved in "Quality assurance" compared with "Quality control" (02 Marks)
- (b) What are the four absolutes of quality management according to Philip B Crosby? (03 Marks)
- (c) Dr. J.M. Juran introduced an approach known as "Quality Trilogy" in order to achieve higher levels of quality. Briefly explain the basic elements of this approach. (03 Marks)
- (d) "Process Approach" and "Statistical Approach" are two important approaches in quality. What are the basic elements of these approaches? (03 Marks)
- (e) "Quality Circles" is an activity to get participation and involvement of employees. What are the objectives of this activity? (02 Marks)
- (f) Name Basic Seven Tools (N7) that used to solve problems encountered in working environment. Give at least one application for each tool. (03 Marks)
- (g) Briefly explain the common cause of variation and special cause of variations in a process. (03 Marks)

(h) What type of statistical control charts you would suggest for following situations.

(03 Marks)

- i Control of Variable product characteristic
- ii Control of Defectives from a process step
- iii Control of Number of defects

(i) Explain the meaning of "Statistical Control" with respect to a process. (03 Marks)

(j) Briefly explain how you would calculate the process capability index. (03 Marks)

(k) What do you understand by statistical Sampling? (02 Marks)

2. (a) "Quality of a product and quality of a service have the same definition but they have marked differences". Discuss this statement.

(b) What are the Difficulties encountered in measuring service quality

(c) Briefly discuss the five aspects that impact on the relationship between quality and productivity.

3. (a) Assume that you are a consultant in Quality. You are required to install a control chart to control defectives at a particular step in a garments manufacturing process. Explain in a step-wise manner how you would undertake the assignment.

(b) The central line of a fraction defective control chart is 0.01. In installing the control chart 100 items were selected each time for inspection. The company has prescribed 3% as the maximum allowable defectives. What is your decision regarding the use of the control chart for controlling defectives?

4. (a) Briefly explain 1 to 7 steps in the Basic Process Improvement Model

(b) What is the 8 step in the Basic Process Improvement Model

(c) Briefly explain what you understand by "Ongoing Process Improvement and Management"

5. (a) "Variation" in product quality is a major challenge facing the industry. What are the basic factors contributing to this variation?
- (b) What are the basic actions you would propose to minimize variation with respect to each factor?
- (c) Briefly explain in a step-wise manner how you would proceed to understand variation.
6. (a) Explain the different types of quality awarding institutions and their importance
- (b) Give brief explanation on Sri Lankan quality awarding organisation and different types of quality awards given by the organisation.
- (c) What are the six legibility categories to get Sri Lanka quality awards?
7. (a) Write an account on the evolution of ISO9000 family of standards.
- (b) What are the benefits of implementing a quality management system in accordance with ISO9000 – 2008.
8. (a) What do you understand by reliability? What are the most important factors emphasized in the definition of reliability?
- (b) Discuss the statement "reliability engineering concepts could be helpful for textile and apparel industry under the current competitive market conditions".