

THE OPEN UNIVERSITY OF SRI LANKA
 POSTGRADUATE DIPLOMA/ MASTERS IN TECHNOLOGY
 IN APPAREL PRODUCTION AND MANAGEMENT
 FINAL EXAMINATION - 2012/2013
 TTM7138-QUALITY MANAGEMENT
 DURATION - THREE HOURS



DATE: 04th August 2013

TIME: 0930 - 1230 hours

Total Number of Questions = 09

Number of Questions to be answered = 06

Answer the question 1, which is compulsory, and five (05) additional questions.

Question 1 carries twenty five (25) marks and questions (02) to 09 carry fifteen (15) marks each.

Compulsory Question

01. a) What are the basic differences between the activities involved in "Quality Assurance" and "Quality Control"? (02%)
- b) Write a brief note on " Dr.W Edward Deming's contribution to quality". (03%)
- c) Dr J.M Juran identified three aspects for the development of quality and gave the name "Quality Trilogy". Briefly explain the elements of this approach. (04%)
- d) What is meant by "Process approach" and state the elements of process approach. (03%)
- e) Quality and production are two important subjects of a company performance. Write an account on how quality and productivity could together to improve the performance. (03%)
- f) Variation in product quality is the biggest challenge in industry. How does this variation occur? What are the basic methods used to minimize variation? (03%)
- g) "When dealing with quality of a product and quality of a service, there are similarities as well as differences". State those. (03%)
- h) A process is said to be stable when it is in statistical control. Explain the meaning of statistical control and how it contributes to stability. (04%)

Select five (05) questions from question 02-09

02. a) "Control and Improvement" in quality are like two sides of a coin, they are linked together but they have differences. Explain this statement with suitable examples. (08%)
- b) Product specification is a vital document in order to achieve quality in manufacturing. Explain this statement giving suitable examples. (07%)
03. a) you are required to install a control chart to control defectives at a particular step in a garment manufacturing process. Explain in a step wise manner how you would proceed with the task. (07%)
- b) Control chart for number of defects(C-control chart) has been set up for a fabric inspection activity. The central time of the control chart is 2. An inspector found 7 defects during an inspection. What should be his decision regarding the inspection? (08%)
04. Discovery and analysis of problems relating to quality uses many quality tools. These quality tools are used during various situations. Write a brief account on the uses of each of the following basic tools: (3x5 = 15%)
- | | | |
|---------------------|-----------------------------|-----------------|
| i. Check sheets | ii. Flow charts | iii. Histogram, |
| iv. Pareto analysis | v. Cause and effect diagram | |
05. a) Explain the concepts and practices relating to kaizen. How does Kaizen differ from practices in the western countries? (07%)
- b) Briefly explain the philosophy behind the Japanese technique known as Just-in-Time (JIT). What are the major advantages, benefits and short comings of JIT? (08%)

06. a) Explain the terms "Reliability", "Availability" and "Maintainability". (06%)
 b) Following data are applied to a proposed hydraulic subsystem.

Part	Failure rate per hour
Check valve	70×10^{-6}
Filter	300×10^{-6}
Relief valve	30×10^{-6}
Transfer valve	1480×10^{-6}
Cylinder	40×10^{-6}
Lines and fittings	80×10^{-6}

If all parts are in series and critical for sub system success, what is the probability that the sub system will run for at least 20 hours? (09%)

07. a) Explain the concepts and practices relating to kaizen. How does Kaizen differ from practices in the western world? (08%)
 b) Briefly explain the philosophy behind the Japanese technique known as Just-in-Time (JIT). What are the major advantages, benefits and short comings of JIT? (07%)
- a) a) A manufacturing company decides to launch a program to study quality costs. If you are assigned this task how would you plan to proceed with it? (06%)
 b) A company manufacturing garments has been facing many problems with suppliers of materials and components. Some stocks were rejected by incoming inspection and returned to suppliers. Relationship with suppliers is at a low level. Company is finding it difficult to look for alternate suppliers urgently. If you are assigned the task of finding solution to the problem how would you plan to proceed with it? (09%)
09. a) Write an account on the evolution of the ISO 9000 series of standards on quality management systems. (08%)
 b) Write an account on the types of internal audits that can be conducted in order to get the maximum benefit from ISO 9000 certification. (07%)