

- N.B.:
1. Question no. 1 is compulsory.
 2. Attempt any three questions from the remaining five questions.
 3. Figures to the right indicate full marks.
 4. Furnish neat sketches and illustrations wherever necessary

Q1. Attempt any four (20)

- a) Explain the concepts of quality, quality control and quality assurance.
- b) Define 'reliability'. Explain the basic principles of reliability and its relevance in TQM.
- c) Explain cause and effect diagram and indicate how the same is used as a problem solving tool.
- d) Briefly explain the salient aspects of ISO 14001 standard for environment management system.
- e) Briefly discuss about six sigma approach and its implications in quality monitoring.

- Q2. a) Explain in detail OC curve for double sampling plan with a suitable example. (10)
Elaborate on 'Consumer's risk' and 'Producer's risk'
- b) Explain in detail quality auditing procedures employed for evaluation of various aspects of quality performance. (10)

- Q3. a) What do you mean by Quality Function Deployment (QFD)? Enumerate the various steps involved in designing house of quality. Give an appropriate illustration to supplement your answers. (10)
- b) Write explanatory notes on the following productivity improvement tools: (10)
(i) Just In Time (JIT) (ii) Concurrent Engineering

- Q4. a) Enumerate various control charts for variables and indicate how they are useful in process control. (12)
- b) What is meant by process capability? How process capability is estimated? Explain various measures that can be undertaken to improve process capability. (8)

- Q5. a) Discuss about supply chain management and its relevance in TQM, highlighting the types, key elements and major tasks. (10)
- b) "TQM today is focused on customer delight". Examine the basis for the statement and highlight various measures employed in TQM to address the perceptions and aspirations of the customers. (10)

- Q6. a) Explain 'Bench Marking'. Enumerate different types of bench marking systems used in industries, indicating the procedures involved. (10)
- b) Elaborate on the significance of top management commitment in strategic planning for quality. (10)

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