

(3 hours)

[Total Marks: 80]

- N.B.:**
1. **Question no. 1 is compulsory.**
 2. Attempt **any three** questions from the remaining.
 3. Figures to the right indicate full marks.
 4. Make and state the assumptions clearly wherever required.
 5. Answers to the same questions should be grouped together.

- Q1. Attempt any four:** (20)
- a) Define Quality. Briefly discuss about the various dimensions of TQM.
 - b) Explain the characteristics of scatter diagram and indicate how it is used as a quality monitoring tool.
 - c) Explain briefly lean manufacturing approach and its relevance in productivity enhancement.
 - d) Define reliability and explain its basic concepts. Bring out its significance in quality management.
 - e) Elaborate on the need for evolving quality policies and objectives.
- Q2. a)** Discuss about the significance of Top Management Commitment in sustaining quality initiatives undertaken by an organization. (10)
- b)** Briefly discuss about bench marking approach and its significance in TQM. What are the types of bench marking approaches? (10)
- Q3. a)** Explain supply chain management and its significant benefits. Briefly discuss about the key elements of supply chain management. (10)
- b)** Elaborate on the perceptions and expectations of customers. Explain quality feedback system and its importance. (10)
- Q4. a)** Enumerate single and double sampling techniques and bring out their advantages, limitations and applications. Explain **Producer's Risk** and **Customer's Risk**. (12)
- b)** Explain cost and effect diagram and indicate how it is used as a problem solving tool. Give an appropriate illustration. (08)
- Q5. a)** Explain the following control charts and bring out their applications and uses. (10)
- i) \bar{x} chart
 - ii) np chart
- b)** Briefly explain the significant aspects pertaining to ISO 14001 quality standard and its relevance in the current context. (10)
- Q6. a)** Elaborate on quality audit and quality certification methodologies. Bring out their implications. (10)
- b)** Enumerate Just In Time (JIT) methodology. What are the essential pillars of JIT. Elaborate on implementation of JIT with TQM. Explain the tangible and intangible benefits of JIT. (10)