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Question Paper Code : 15034

M.B.A. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2016.

First Semester

BA 7104 — TOTAL QUALITY MANAGEMENT

(Regulations 2013)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define quality. Give an example.
2. Define customer retention.
3. Define Tolerance design.
4. When do we require Quality circle?
5. Define Type II error.
6. What is Total Productive Maintenance?
7. When do we use Analytic Hierarchy Process (AHP) in HOQ matrix?
8. What are the benefits of POKA YOKE?
9. Define quality audit. Give an example.
10. What are the benefits of TQM?

PART B — (5 × 13 = 65 marks)

11. (a) Discuss in detail the dimensions of product and service quality. (13)

Or

- (b) Describe the cost of quality and vision mission and policy statements of quality. (13)

12. (a) Explain the deming cycle and its role in quality improvement also explain the role of managers and supervisors in Deming's approach. (13)

Or

- (b) State and explain Crossby's 14-step plan for quality improvement. (13)
13. (a) Discuss the procedure to be followed in the implementation of six sigma in a chemical industry. (13)

Or

- (b) Define process capability. How will you measure process capability? What are its significance and its advantages? State the importance of SPC in software industry? (13)
14. (a) Consider the Airline Transportation Industry. Develop a HOQ showing customer requirements and technical descriptors? What are the advantages of using QFD? (13)

Or

- (b) Describe the procedure of process FMEA and its implementation in leather industry. (13)
15. (a) Select an organization that is registered or is going through the process of being registered to ISO 9004:2000 standards. Describe the key steps of the process that the organization must undertake. (13)

Or

- (b) Write short notes for the following :
- (i) TQM culture. (3)
 - (ii) Leadership. (3)
 - (iii) Employee involvement and motivation. (4)
 - (iv) Empowerment. (3)

PART C — (1 × 15 = 15 marks)

16. (a) In a textile, it is important that the acidity of the solution used to dye fabric be within certain acceptable values. Data values are gathered for a control chart by randomly taking four observations from the solution and determining the average pH value and range. After 25 such samples the following summary information is obtained

$$\sum_{i=1}^{25} \bar{X}_i = 195, \sum_{i=1}^{25} R_i = 10.$$

the specifications for the pH value are 7.5 ± 0.5 .

- (i) Find the \bar{X} and p-chart control limits (5)
- (ii) Find the 1σ and 2σ \bar{X} chart limits. (5)
- (iii) What fraction of the output is non-conforming (assuming a normal distribution of pH values)? (5)

Or

- (b) A building contractor subcontracts a job involving hanging wallpaper to a local merchant. To have an idea of the quality level of the Merchant's work, the contractor randomly select 300 ft² and counts the number of blemishes. The total number of blemishes for 30 samples is 80. Construct the center line and control limits for an appropriate chart. Is it reasonable for the contractor to set a goal of an average of 0.5 blemish per 100 ft²?