

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 2981

Roll No.

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B.Tech.

(SEM. VII) ODD SEMESTER THEORY

EXAMINATION 2013-14

TOTAL QUALITY MANAGEMENT

Time : 3 Hours

Total Marks : 100

Note :- Attempt all questions. Marks allotted are indicated against every part of each question.

1. Attempt any **four** of the following : (5×4=20)
 - (a) What do you mean by evolution of quality ?
 - (b) Write the principles of TQM.
 - (c) Explain the methods of manufacturing in the light of flexible and pull manufacturing. What are the three main considerations of modern manufacturing ?
 - (d) What is the role of suppliers in modern manufacturing ?
Explain the criteria for selecting the suppliers.
 - (e) What is strategic sourcing ? Explain.
 - (f) Explain quality aspects in sales. What is the role of after-sales efforts in ensuring maximum customer satisfaction ?

2. Attempt any four of the following : (5×4=20)

- (a) Discuss the factors to be considered for organizational structure for quality management.
- (b) What do you understand by quality functions ? Explain.
- (c) What is quality value and how does it correlate with quality cost ?
- (d) Briefly describe the various quality costs; which cost should a company concentrate most on ? Give reasons.
- (e) Explain the dimensions of quality.
- (f) Human factor is most important element in quality of a product. Justify.

3. Attempt any two of the following : (10×2=20)

- (a) What do you mean by variables and attributes ? Explain \bar{X} and R-charts.
- (b) What do you mean by fraction defective ? Why p-chart even though much inferior as compared to the \bar{X} and R-charts is effectively used in diagnosis of causes of trouble ? Explain p-chart.
- (c) Control charts for \bar{X} and R are maintained on a certain dimension of a manufactured part, measured in cm. The subgroup size is 4. The values of \bar{X} and R are computed for each subgroup. After 20 subgroups $\sum \bar{X} = 41.283$, and $\sum R = 0.280$. Compute 3-sigma limits for the \bar{X} and R-charts, and estimate the value of σ' on the assumption that the process is in statistical control. ($A_2 = 0.729$, $D_2 = 4.698$, $D_3 = 0.00$, $D_4 = 2.282$)

4. Attempt any two of the following : (10×2=20)

- (a) Explain the process of identification and analysis of defects.
- (b) Explain a cause-and-effect (Ishikawa) diagram to identify a process defect.
- (c) Write short notes on :
 - (i) Reliability of components assembled in series and parallel systems.
 - (ii) Quality Circle.

5. Attempt any two of the following : (10×2=20)

- (a) What are the seven wastes identified by Shigeo Shingo, as being the targets of continuous improvement in production processes ?
- (b) What is ISO 9000 ? Explain its salient features.
- (c) Write short notes on :
 - (i) JIT Technique
 - (ii) Taguchi Quality Loss Function.