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

PAPER ID : 2981 Roll No. | | | | | | | | | | |

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 $\overline{X}$ and R-charts.

(b) What do you mean by fraction defective ? Why p-chart even though much inferior as compared to the $\overline{X}$ and R-charts is effectively used in diagnosis of causes of trouble ? Explain p-chart.

(c) Control charts for $\overline{X}$ and R are maintained on a certain dimension of a manufactured part, measured in cm. The subgroup size is 4. The values of $\overline{X}$ and R are computed for each subgroup. After 20 subgroups $\sum \overline{X} = 41.283$, and $\sum R = 0.280$. Compute 3-sigma limits for the $\overline{X}$ 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.