

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

PAPER ID : 4028

Roll No.

0103340016

B.Tech.

SEVENTH SEMESTER EXAMINATION, 2004-2005

TOTAL QUALITY MANAGEMENT (TQM)

Time : 3 Hours

Total Marks : 100

Note : (i) Attempt ALL question.

(ii) All questions carry equal marks.

1. Answer *any two* of the following :— (10x2=20)

- What is TQM ? Explain evolution of quality function from Quality Measurement Phase to TQM Phase.
- Write the Objectives of vendor - consumer quality program and explain its components.
- Explain various methods and techniques for manufacture, inspection and control of product.

2. Answer *any two* of the following :— (10x2=20)

- Advice the organization structure needed to deal with quality problems posed by Multiple Factory Company. Write the duties of quality staff.

- (b) Write activities involving costs of quality. Explain the economics of quality of Conformance.
- (c) How the operator errors be classified into logical subspecies and explain organized approach for reduction of operator errors ?

3. Answer *any two* of the following :- (10x2=20)

- (a) What is control chart and its benefits. Explain the concept and principle on which it works ?
- (b) Construct \bar{X} , R Chart for bolt length specified at 20 cm. Hourly sample of 5 Nos. each are taken and length measured is recorded as below :

Hours	1	2	3	4	5
1.	19.5	19.8	19.6	20.4	20.1
2.	20.1	19.8	20.3	19.7	19.6
3.	20.0	20.4	20.5	19.9	20.0
4.	19.9	20.4	20.3	20.1	19.7 ✓
5.	19.8	19.2	19.7	20.4	20.3
6.	20.3	20.0	19.4	20.2	19.6
7.	19.6	20.7	20.3	19.8	19.7
8.	20.4	19.4	19.8	20.4	19.9

Given for sample of size 5, the constant $A_2=0.577$, $D_3=0$, $D_4=2.115$.

- (c) Give a detail discussion about the construction and analysis of R charts.

4. Answer *any two* of the following :- (10x2=20)

- Explain sporadic defect and chronic defect and their distinction w.r.t. various aspect.
- Calculate the probability of survival of a equipment that will work for 500 Hrs and which consist of 4 sub - assemblies system having following MTBF

Sub - System	MTBF
A	5000 Hrs
B	3000 Hrs
C	15000 Hrs
D	15000 Hrs

$\lambda = \frac{1}{MTBF}$
 $R_1 = e^{-\lambda_1 t}$
 $R_2 = e^{-\lambda_2 t}$
 $R_3 = e^{-\lambda_3 t}$
 $R_4 = e^{-\lambda_4 t}$

- Define the Quality Circle and explain its philosophy and benefits.

5. Answer *any two* of the following :- (10x2=20)

- What is ISO 9000 ? Explain its principle, benefits and limitation.
- How ISO standards are developed/revised. List out various major changes made in ISO 9000 (2000).
- Write short notes on :

- Taguchi Philosophy
- JIT



