

Roll No. ....

Total Pages : 03

BT-7/M-15

8753

STATISTICAL QUALITY CONTROL AND  
RELIABILITY

ME-405-E

Time : Three Hours]

[Maximum Marks : 100

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

## Unit I

1. Write briefly on the contributions of Juran towards development of the concept of quality. How do we create quality by design ?
2. Briefly describe the evolution, applications and implementation of TQM.

## Unit II

3. Write briefly on the following :
  - (a) Pi charts and U charts
  - (b) Process Capability.

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P.T.O.

4. Draw a suitable control chart for the given data :

| Item No. | No. of Defects |
|----------|----------------|
| 1        | 5              |
| 2        | 6              |
| 3        | 3              |
| 4        | 1              |
| 5        | 2              |
| 6        | 6              |
| 7        | 8              |
| 8        | 7              |
| 9        | 9              |
| 10       | 3              |
| 11       | 6              |
| 12       | 5              |
| 13       | 8              |
| 14       | 4              |
| 15       | 2              |

## Unit III

5. Describe the concept of multiple and sequential sampling. What is acceptance number and discuss its significance ?

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6. Write briefly on the following :

- (a) OC Curve
- (b) Selection of Sampling Plans.

#### Unit IV

7. Write briefly on various factors affecting reliability.

How can reliability be evaluated ?

8. Discuss the patterns of failures. Calculate the reliability of the system shown below.

