

Roll No.

Total Pages : 03

BT-7/D-19

37057

STATISTICAL QUALITY CONTROL AND
RELIABILITY
ME-405E

Time : Three Hours]

[Maximum Marks : 100

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

Unit I

1. Write briefly on the following :
 - (a) ISO definition of quality. 10
 - (b) Concept and applications of TQM. 10
2. Briefly discuss the concept of "economics of quality". Also describe the structure and applications of a fishbone diagram, using a sketch. 20

Unit II

3. Write briefly on the following :
 - (a) Modified Control Limits for X charts 7
 - (b) Inherent and potential capability 7
 - (c) Sensitivity of p chart. 6

4. Compare 'defect' with 'defectives'. Draw a suitable control chart for the given data :

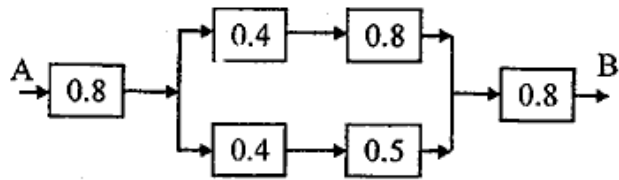
| Item No. | No. of Defects | |
|----------|----------------|----|
| 1 | 3 | |
| 2 | 6 | |
| 3 | 5 | |
| 4 | 2 | |
| 5 | 1 | |
| 6 | 6 | |
| 7 | 8 | |
| 8 | 7 | |
| 9 | 9 | |
| 10 | 3 | |
| 11 | 6 | |
| 12 | 5 | |
| 13 | 8 | |
| 14 | 10 | |
| 15 | 3 | 20 |

Unit III

5. Describe and analyze double sampling plan. What is process average and how are sampling plans designed ? 20
6. Draw an OC curve and describe AOQL, LTPD, Consumer Risk and Producer Risk. 20

Unit IV

7. Write briefly on the following :
- (a) Patterns of failure 6
 - (b) Mean time to failure 7
 - (c) Redundancy and reliability. 7
8. Discuss the factors affecting reliability. Calculate the reliability of the system shown below : 20



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