Code No. 3191

FACULTY OF SCIENCE

B.Sc. V-Semester (CBCS) Examination, November / December 2018

Subject : Statistics (Statistical Quality Control and Reliability)

Paper – VI (A) (DSE E – I)

Time : 3 Hours

Max. Marks: 60

PART – A (5 x 3 = 15 Marks)
(Short Answer Type)
Note : Answer any FIVE of the following questions.

1. What is the importance of SQC in industry?
2. Give the statistical basis of control charts.
3. What is c-chart and how do you interpret it?
4. What is the process capability index?
5. Derive the reliability function in terms of hazard rate.
6. Explain the concept of memory less property.
7. What are Rectifying Inspection plans?
8. Describe a single sampling plan. Give its ASN and ATI.

PART – B (3 x 15 = 45 Marks)
(Essay Answer Type)
Note: Answer ALL questions.

9 (a) What are control charts? How do you construct mean and range charts?

OR

(b) How do you construct control chart for number of defectives in cases of (i) fixed sample size and (ii) variable sample size.

10 (a) Construct c-chart for variable sample size to the following data and state whether the process is under statistical quality control.

Lot No	1	2	3	4	5	6	7	8	9	10
Sample size	110	125	115	115	125	145	140	120	155	145
Number of defectives	15	14	13	17	14	3	14	11	15	12

OR

(b) Define (i) Natural tolerance limits ; (ii) specification limits and (iii) Modified control charts.

11 (a) What is double sampling plan? Explain its OC curve.

OR

(b) Explain parallel and series configuration of a system. Also derive their system reliability.

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