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Name………………………

Reg. No………………….

THIRD SEMESTER M.Sc. DEGREE EXAMINATION, NOVEMBER 2016
(CUCSS - PG)
(Statistics)
CC15P ST3 E03 - Statistical Quality Control
(2015 Admission)

Time: Three Hours   Maximum: 36 Weightage

PART A
*Answer **all** questions.*
Each question carries 1 weightage.

1. What is quality improvement?

2. What do you understand by control charts in statistical quality control?

3. Compare R-chart and sigma chart.

4. Compare between control charts for variable and control chart for attributes.

5. Distinguish between Natural tolerance limits and specification limits.

6. Comment on the statement that even if the sample points are within control limits, the chart may indicate a tendency for lack of control.

7. Discuss the relationship between a control chart and statistical hypothesis testing.

8. What is meant by lot tolerance percentage defective (LTPD)?

9. Explain the meaning of average outgoing quality (AOQ).

10. How does the theory of orthogonal arrays help in improving the quality of a product?

11. Define the OC function for a single sampling plan.

12. Explain a np chart.

(12 x 1=12 weightage)

PART B

*Answer any **eight** questions.*

Each question carries 2 weightage.

13. Discuss the use of statistical quality control and control charts.

14. When is a process said to be under statistical control? Describe different types of control charts.

15. "The control charts make it possible to distinguish between variations which are due to chance cause and those due to assignable cause". Examine critically.

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16. Explain the method of constructing control charts for $\bar{X}$ and R giving the formula for the upper and lower control limits in both cases.

17. Briefly differentiate between natural, specification and modified control limits.

18. Explain the construction of c-chart with varying sample sizes.

19. What do you understand by acceptance sampling plan?

20. Discuss the role of multilevel sampling plan CSP-I.

21. What is a single sampling inspection? Find the average amount of inspection and AOQL for a single sampling plan.

22. Describe an item by item sequential sampling plan by attributes.

23. Explain and bring out the distinction between Acceptance Quality Level (AQL) and Average Outgoing Quality Limit (AOQL).

24. Explain the method of construction of the OC curves for an attribute double sampling plan.

(8 x 2=16 weightage)

PARTC

Answer any two questions.

Each question carries 4 weightage.

25. Explain chain sampling and skip lot sampling plans give two applications each.

26. Explain V- mask procedure and EWMA with suitable suitable examples.

27. Explain the construction of double sampling plan. Obtain ASN, AOQL and ATI for double sampling plan.

28. What is total quality management? Discuss the techniques for total quality management. Explain the basis of six sigma.

(2 x 4=8 weightage)

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