



QP CODE: 26019635



Reg No :

Name :

M.Sc DEGREE (CSS) EXAMINATION, MARCH 2026

Fourth Semester

MSC Data Analytics

ELECTIVE - ST910402 - RELIABILITY MODELING AND STATISTICAL QUALITY

CONTROL

2020 Admission Onwards

EDD88FF6

Time: 3 Hours

Weightage: 30

Part A (Short Answer Questions)

*Answer any **eight** questions.*

Weight 1 each.

1. Give the expression for reliability in coherent systems.
2. Explain series-parallel configuration.
3. What you mean by path set?
4. What you mean by lerch family of distributions?
5. What you mean by increasing mean residual life?
6. What you mean by chance causes?
7. What are the working rules of a cusum chart?
8. What is lot acceptance sampling plan?
9. Define continuous sampling.
10. What is DMAIC?

(8×1=8 weightage)

Part B (Short Essay/Problems)

*Answer any **six** questions.*

Weight 2 each.

11. Define mean residual life.
12. Find the mean time to failure of exponential distribution.
13. Define IFR and DFR.





14. What you mean by NBU? What is its dual?
15. How will you construct the control limits of c chart?
16. Explain briefly natural tolerance limit.
17. Discuss the principles behind TQM.
18. Discuss about ISO standardization.

(6×2=12 weightage)

Part C (Essay Type Questions)

*Answer any **two** questions.*

*Weight **5** each.*

19. Explain life distributions with examples.
20. Discuss the estimation of reliability function and failure rate in nonparametric case.
21. Explain Sigma chart. Derive its control limits.
22. Explain single sampling plan along with properties.

(2×5=10 weightage)

