QP CODE: 25804446

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Reg No : .....

Name : .....

INTEGRATED MSc DEGREE EXAMINATION, OCTOBER 2025

Fifth Semester

INTEGRATED MSc BASIC SCIENCES - STATISTICS

CORE - IST5CR04 - STATISTICAL QUALITY CONTROL

2020 Admission Onwards

05333E5E

Time: 3 Hours Weightage: 30

Part A (Short Answer Questions)

*Answer any **eight** questions.*

*Weight **1** each.*

1. Briefly explian Pareto chart.
2. Draw a typical control chart .
3. Write down the two methods for setting up the control limits.
4. In $\bar{X}$ – chart, if one of the sample means lies outside the control lines, what would you conclude?
5. If $\lambda' = 1.4$,then write down the L.C.L and U.C.L. for C chart.
6. Draw OC curve.
7. What is Acceptance-sampling?
8. What is meant by lot tolerance percentage defective?
9. What is meant by average outgoing quality(A.O.Q).
10. Draw ASN curve.

(8×1=8 weightage)

Part B (Short Essay/Problems)

*Answer any **six** questions.*

*Weight **2** each.*

11. Explain the factors affecting the quality of a product.
12. Distinguish between chance and assignable causes.
13. Write a short note on specification limit.
14. The following are the number of defects noted in the final inspection of balls of woolen cloth 0, 3, 1, 4, 2, 2, 1, 3, 5, 0, 2, 1, 0, 3.Draw appropriate control chart.

15. The following data gives reading 10 sample of size 6 each in the production of a certain components

sample	1	2	3	4	5	6	7	8	9	10
mean $\bar{X}$	372	509	504	382	548	357	214	514	607	753
Range R	95	125	100	91	68	65	148	28	37	80

Draw appropriate control chart.

16. During an examination of equal lengths of cloth, the following are the number of defects observed.1, 3, 2, 0, 4, 7, 7, 5, 4,2.Draw a control chart for the number of defects and comment whether the process is under control or not

17. Distinguish between producer's and consumer's risk.

18. Explian different types of OC curves in single sampling plan.

(6×2=12 weightage)

Part C (Essay Type Questions)

*Answer any **two** questions.*

*Weight **5** each.*

19. Explain basic principle of control chart.

20. Explain $\bar{X}$ – chart.

21. The following are the figures of defectivs in 22 lots each containing 2000 rubber beds 425 ,430,216,341,225,322,280,306,337,305,356,402,216,264,126,409,193,326,280,389,451,420. Draw control chart for fraction defectives and comment on the state the control of the process.

22. Explain sampling inspection plans in reference to statistical quality control

(2×5=10 weightage)