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24-ST-42

**M.Sc. IV SEMESTER [MAIN/ATKT] EXAMINATION  
JUNE - JULY 2024**

**STATISTICS**  
**Paper - II**  
**[Statistical Quality Control]**

*[Max. Marks : 75]*

*[Time : 3:00 Hrs.]*

*[Min. Marks : 26]*

**Note :** Candidate should write his/her Roll Number at the prescribed space on the question paper.  
Student should not write anything on question paper.  
Attempt five questions. Each question carries an internal choice.  
Each question carries **15 marks**.

**Q. 1** Explain control chart for 'Mean' and obtain its control limits and also its O.C. and ARL functions.

**OR**

Explain p-chart and d-chart ?

**Q. 2** Explain the use of V mask in cusum control charts.

**OR**

Write a note on control charts based on geometric moving averages.

**Q. 3 a)** Explain the benefits of sampling inspection plan.

**b)** Define single sampling plan for unknown sigma.

**OR**

Explain double sampling inspection plan. Derive its OC, AOQ, ASN and ATI.

**Q. 4** Explain continuous sampling plan A and discuss its properties.

**OR**

Explain curtailed and semi curtailed sampling plans completely.

**Q. 5** Explain the six-sigma methodology and its applications.

**OR**

Discuss the environment of Six-sigma for improving performance of a process.