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**25-ST-43-A**

## **M.Sc. IV SEMESTER [MAIN/ATKT] EXAMINATION MAY - JUNE 2025**

### **STATISTICS**

Paper - III

#### **[Advanced Operation Research]**

*[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 all five questions. Each question carries an internal choice.  
Each question carries **15 marks**.

**Q. 1** Explain graphical solution of  $2 \times n$  and  $m \times 2$  games.

**OR**

Define the following terms -

- i) Saddle point.
- ii) Value of the game.
- iii) Optimal strategy.

**Q. 2** Write a note on Probabilistic Inventory Models.

**OR**

Explain Economic Order Quantity (EOQ) Model.

**Q. 3** Explain the problem of replacement of equipment that deteriorates with Time ?

**OR**

Explain Group Replacement Policy.

**Q. 4** What is Queueing System. Explain in brief the main characteristics of the queueing system.

**OR**

Explain  $(M/M/1) : (\infty \backslash FC \text{ FS})$  queueing system and solve it under steady state condition.

**Q. 5** Discuss in detail the Job sequencing problem with  $n$  jobs through two machine.

**OR**

Explain the term "PERT" and "CPM". What are the main difference between PERT and CPM ?