

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

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

Q. 1 Define Game. Describe characteristics of game theory. Explain pure strategy and mixed strategy.

OR

Explain minimax criterion and optimal strategy. State and prove fundamental theorem of rectangular games.

Q. 2 What is Inventory ? Discuss various types of inventory models.

OR

What do you understand by Periodic Review Inventory System (PRIS). State advantages and disadvantages of PRIS.

Q. 3 Give the introduction of replacement problem. State factors for the replacement problem. Explain in detail , gradual failure and sudden failure.

OR

State and prove mortality theorem.

Q. 4 Describe in detail, queuing system and queuing problem.

OR

Obtain the steady state difference equations for the queuing model (M/M/1) : (M/FCFS) in usual notations and solve them for P_0 and P_1 .

Q. 5 What do you mean by job sequencing problem. Explain in brief, number of machines, processing order processing time and no passing rule.

OR

Discuss in detail, problem of processing of n jobs with 3 machines.