

MS-51

Management Programme

**ASSIGNMENT
(January to December)
2021**

MS – 51: Operations Research



**School of Management Studies
INDIRA GANDHI NATIONAL OPEN UNIVERSITY
MAIDAN GARHI, NEW DELHI – 110 068**

ASSIGNMENT

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|-----------------------|----------|-----------------------------|
| Course Code | : | MS-51 |
| Course Title | : | Operations Research |
| Assignment No. | : | MS-51/TMA/SEM-I/2021 |
| Coverage | : | All Blocks |

Note : Attempt all the questions and submit to the Coordinator of your study centre on or before 31st October, 2021.

- Five candidates are approved for appointment as personal secretaries to five members of the board of a company. The preferences of each member are given below. How would you make allocations so that satisfaction level is maximized?

| Board Members Candidates | 1 | 2 | 3 | 4 | 5 |
|--------------------------------|---|---|---|---|---|
| A | 1 | 2 | 1 | 2 | 3 |
| B | 2 | 3 | 3 | 1 | 1 |
| C | 4 | 1 | 5 | 3 | 4 |
| D | 5 | 4 | 2 | 5 | 5 |
| E | 3 | 5 | 4 | 4 | 2 |

- In an engineering workshop, motor breakdown at an average of 5 per day, the number of breakdown being Poisson distributed. The present unqualified mechanic can repair motors at an average rate of 6 per day and is paid Rs. 100 per day. A qualified mechanic offers his services at Rs. 200 per day and is capable of repairing at an average of 8 motors per day. When a motor is idle, there is downtime cost incurrence at the rate of Rs. 100 per day. Would it be worthwhile to employ the qualified mechanic in place of the present mechanic? Justify on cost/ benefit analysis.
- Determine which course of action Player B will not use in the following game. Obtain the best strategies for both players and the value of the game.

| | | | | |
|----------|----|----------|----|-----|
| | | Player B | | |
| | | I | II | III |
| Player A | I | -3 | -1 | 7 |
| | II | 4 | 1 | -2 |

- “Operations Research is a logical and systematic approach to provide a rational basis for decision making.” Explain the phases and processes of Operations Research Study.
- Write the short note on the following:-
 - Binomial Distribution
 - Cutting plane method for solving Integer Programming
 - Limitations of Simulation
 - Objectives of Inventory