

01656

MANAGEMENT PROGRAMME

Term-End Examination

June, 2017

MS-051 : OPERATIONS RESEARCH

Time : 3 hours

Maximum Marks : 100

(Weightage 70%)

Note : (i) *Attempt any four questions.*

(ii) *All questions carry equal marks.*

1. (a) Explain the meaning, purpose and limitations of Operations Research.
- (b) What do you understand by Linear Programming? Discuss application of linear programming in business and industry with the help of an example.
2. (a) What is a basic feasible solution of a transportation problem? Mention the methods available for finding an initial basic feasible solution.
- (b) What is goal programming? Highlight major differences between linear programming and goal programming.

3. (a) Briefly discuss the application of Quadratic programming in Portfolio selection.
(b) "Inventory is a part and parcel of every facet of business life. Without it no business activity can be performed." Comment.

 4. (a) Briefly describe the following for a queueing model :
 - (i) Queue discipline
 - (ii) Maximum size of a queue
(b) Illustrate the relationship between queueing and service rates with the help of a diagram.

 5. (a) What do you understand by 'Game' in the context of game theory ? What is the 'Strategy' of a player ?
(b) Discuss the steps one has to go through in the simulation process.

 6. Write short notes on **any three** of the following :
 - (a) Probability distribution of Poisson variable
 - (b) A surplus variable and its use in LPP
 - (c) Cutting plane method
 - (d) M/M/1 Queueing model
 - (e) $2 \times n$ games
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