

Reg. No. : .....

Name : .....

Fourth Semester M.Com. Degree Examination, September 2019

Elective : Finance/Marketing

**MANAGEMENT OPTIMISATION TECHNIQUES**

Common for CO 243 F (2014 admission onwards)/  
CO 244 M (2015 admission onwards)

Time : 3 Hours

Max. Marks : 75

PART – A

Answer **all** questions. Each question carries 2 marks. :

1. Define operations research.
2. What do you mean by linear programming?
3. What is optimization equation?
4. What do you mean by Modi method?
5. What is saddle point?
6. Define traffic intensity in queuing theory.
7. Write any two differences between PERT and CPM.
8. What do you mean by Degeneracy in LPP?
9. What do you understand by Assignment problem?
10. What do you mean by unbalanced transportation problem?

(10 × 2 = 20 Marks)

P.T.O.



## PART – B

Answer any **five** questions. Each question carries **5** marks.

11. Explain the nature and importance of operation research.
12. Explain the advantages of linear programme.
13. Explain the types of transportation problems.
14. Draw a network corresponding to the following information. Obtain the early and late start and completion times and determine the critical activity.

Activity	1-2	1-3	2-6	3-4	3-5	4-6	5-6	5-7	6-7
Duration	4	6	8	7	4	6	5	19	10

15. Particulars relating to an inventory are as below :

Annual consumption - 6000 units (in 360 days)

Cost per unit - \$1

Ordering cost - \$ 6 per order

Inventory carrying charge — 50%

Normal lead time = 30 days

Safety stock - 60 days consumption

Find out (a) each time, how much should be ordered, (b) when the order should be placed, (c) what should be the ideal inventory level immediately before the delivery of material ordered is received, (d) each many times orders for EOQ should be placed in a year.

16. Customers arrive at a sales counter manned by a single person according to a Poisson process with a mean rate of 20 per hour. Time required to serve a customer has a exponential with a mean of 100 seconds. Find the average waiting time of a customer.
17. Describe Queuing theory with examples.
18. What do you mean by EOQ model in inventory management? What are its limitations?

**(5 × 5 = 25 Marks)**



PART – C

Answer any **two** questions. Each question carries 15 marks.

19. State the rules of constructing a project network.
20. A finished product must weigh exactly 150 grams. Two raw materials used in manufacturing the product are: A with a cost of Rs.2 per unit and B with a cost of Rs.8 per unit. At least 14 units of B and not more than 20 units of A must be used. Each unit of A and B weighs 5 and 10 grams respectively. How much of each type of raw materials should be used for each unit of final product in order to minimize the cost? Use simplex method.
21. Discuss replacement theory.
22. Differentiate between PERT and CPM.

**(2 × 15 = 30 Marks)**

