



## उत्तराखंड मुक्त विश्वविद्यालय हल्द्वानी (नैनीताल)

Programme Name-MBA-Fourth Semester

Programme Code-MBA-10

Course Name-Applied Operations Research

Course Code-MU 2407

Maximum Marks-40

Session -2013-14,Summer

Last Date of Submission: 15 June , 2014

### Section-A

Section 'A' contains 08 short answer type questions of 5 marks each. Learners are required to answer 4 questions only. Answers of short answer-type questions must be restricted to 250 words approximately.

Discuss the following (1-8) –

1. Characteristics of operations research.
2. Replacement theory.
3. Sensitivity analysis.
4. Advantages of inventory control.
5. Characteristics of Queuing System
6. Critical Path Method (CPM)
7. Decision tree
8. The annual demand of an item is 8000 units. The unit cost is Rs.8 and the inventory carrying charges 25% per annum. If the cost of one procurement is 80, determine.
  - a. EOQ
  - b. No. of orders per year
  - c. Time between two consecutive orders
  - d. The optimal cost.

### Section-B

Section 'B' contains 04 long answer-type questions of 10 marks each. Learners are required to answer 02 questions only.

1. "Operations Research increases creative and judicious capabilities of a decision maker". Comment.
2. A marketing manager wants to allocate his annual advertising budget of Rs.20, 000 in two media vehicles X and Y. The unit cost of a message in media X is Rs. 1,000 and that of Y is Rs. 1,500. Media X is a monthly magazine and requires only one insertion in a single issue. In media Y at least 5 messages should appear while, in media X 12 messages should appear. The expected effective audience for unit messages in the media X is 40,000 and for media Y is 55,000. Solve this linear programming problem for maximizing the total effective audience.
3. What are the properties of Network? Explain PERT.
4. Explain Wolfe's method of solving quadratic problem.