

(Pages : 2).

Name.....

Reg. No.....

**SECOND SEMESTER M.Com. DEGREE EXAMINATION, JUNE 2016**

(CUCSS)

MC 2C 09—MANAGEMENT SCIENCE

(2015 Admissions)

Time : Three Hours

Maximum 36 : Weightage

**Part A**

*Answer all questions.*

*Each question carries 1 weightage.*

1. Define Operation Research.
2. Write the expansion of PERT and CPM ?
3. Define the term "ACTIVIT" in a network ?
4. What is an Assignment Problem ?
5. What is Network ?
6. What is meant by Critical Path ?

(6 × 1 = 6 weightage)

**Part B**

*Answer any six question.*

*Each question carries 3 weightage.*

7. What are the Phases of Operations Research ?
8. State the steps of Formulation of Linear Programming
9. Explain Forward Pass and Backward Pass Method in Network Analysis.
10. What is Assignment Problem in Operation Research ?
11. Briefly explain the Game Theory.

**Turn over**



12. There is 40% chance that a patient admitted to the hospital, is suffering from cancer. A doctor has to decide whether a serious operation should be performed or not. If the patient is suffering from cancer and the serious operation is performed, the chance that he will recover is 70%, otherwise it is 35%. On the other hand, if the patient is not suffering from cancer and the serious operation is performed the chance that he will recover is 20%, otherwise it is 100%. Assume that recovery and death are the only possible results. Construct an appropriate decision tree. What decision should the doctor take ?
13. Distinguish between CPM and PERT.
14. A company is involved in the production of two items (X and Y). The resources need to produce X and Y are twofold, namely machine time for automatic processing and craftsman time for hand finishing. The table below gives the number of minutes required for each item:

	Machine time	Craftsman time
Item X	13	20
Y	19	29

The company has 40 hours of machine time available in the next working week but only 35 hours of craftsman time. Machine time is costed at £10 per hour worked and craftsman time is costed at £2 per hour worked. Both machine and craftsman idle times incur no costs. The revenue received for each item produced (all production is sold) is £20 for X and £30 for Y. The company has a specific contract to produce 10 items of X per week for a particular customer.

- (a) Formulate the problem of deciding how much to produce per week as a linear program.
- (b) Solve this linear program graphically.

(6 × 3 = 18 weightage)

### Part C

*Answer any two question.*

*Each question carries 6 weightage.*

15. Write a short note on Programme Evaluation and Review Technique.
16. State the Elements of Queuing Systems.
17. Explain Hungarian Assignment Method.

(2 × 6 = 12 weightage)