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Name

Reg. No. . . . .

THIRD SEMESTER M.A. DEGREE EXAMINATION, DECEMBER 2015

(CUCSS)

Applied Economics

Core VII—OPERATIONS RESEARCH FOR ECONOMIC ANALYSIS

Time : Three Hours
Maximum : 36 Weightage

Part A

*Answer **all** questions.*
*Each bunch of **four** questions carries a weightage of 1.*

A. Multiple choice :

1 The criterion of realism was introduced by :

(a) Hurwicz.
(b) Baumol.

(c) Kaldor.
(d) Marx.

2   CPM helps to achieve :

(a) Minimum cost.
(b) Minimum time.

(c) Minimum time of cost.
(d) Time cost trade off.

3 In the assignment problem, jobs are assigned according to the principle of :

(a) Efficiency.
(b) Cost.

(c) Productivity.
(d) All the above.

4 Expected opportunity loss is essential for calculating :

(a) Maximax.
(b) Maximin.

(c) Minimax.
(d) All of the above.

B. Multiple choice :

5 When there are two competitors playing a game is called :

(a) Two person game.
(b) N-person game.

(c) Zero person game.
(d) None of these.

6 An activity which must be completed before one or more other activities start is known as :

(a) Predecessors activity.
(b) Successor activity.

(c) Dummy activity.
(d) None of these.

Turn over

7 The features of LPP are :

    (a) Objective function.   (b) Linear constraints.

    (c) Feasible solution.————————(d) All the above.————————

8 The method of measuring decision under uncertainty are :

    (a) Maximax.   (b) Minimax.

    (c) Laplace criterion.————————(d) All the above.————————

C. Fill in the blanks :

    9 Degeneracy in LPP is known as _____

    10 The term operation research was first coined _____

    11 Interfering float is equal to _____

    12 Pay-off matrix points out _____

D. True *or* False :

    13 Pure strategy is a decision always to choose a particular course of action.

    14 Usually MODI method is used for finding an optimal solution for transportation problem.

    15 A feasible solution which optimises the objective function is known as optimal solution.

    16 Dual of the dual is dual.

$(16 \times \frac{1}{4} = 4$ weightage$)$

Part B

Answer any **ten** *not exceeding* **one** *page each.*
Each question carries a weight of 2.

17 What is principle of dominance ?

18 Write a note on decision tree.

19 Distinguish between EMU and EVPI.

20 Find the saddle point player B :

		B_1	B_2	B_3
Player A	A_1	6	8	7
	A_2	4	12	2

21 Distinguish between North West Corner Rule and Lowest Cost Entry method.

22 How can solve unbalanced assignment problem ?

23 Explain Bayecian decision theory.

24 What are the time estimates in PERT analysis ?

25 Explain resource allocation in networks.

26 Explain quadratic programming.

27 Explain the scope of OR.

28 Explain the methods used for solving mixed strategy.

(10 x 2 = 20 weightage)

Part C (Essay Questions)

Answer any **three** *not exceeding* **three** *pages each.*
Each question carries a weight of 4.

29 Explain time cost trade off.

30 Explain the methods used for decision-making under uncertainty.

31 Explain Non-Linear Programming.

32 Solve the LPP by using Simplex method :

Maximize $Z = 4X_1 + 10X_2$

subject to $2X_1 + X_2 > 50$
$2X_1 + 5X_2 > 100$
$2X_1 + 3X_2 > 90$
$X_1, X_2 \geq 0.$

33 Solve the following assignment problem :—

	1	2	3	4
A	10	12	19	11
B	5	10	7	8
C	12	14	13	11
D	8	15	11	9

(3 x 4 = 12 weightage)