D 71567 (Pages : 4) Name.....

Reg. No.....

THIRD SEMESTER M.A. DEGREE EXAMINATION, DECEMBER 2014

(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 weightage* 1.

A—Multiple Choice Questions :

1. Among the following, which is an example for risk ?

(a) Fire. (b) Natural calamity.

(c) (a) and (b). (d) Totally unexpected fall in demand.

2. While drawing a decision tree, state of nature should start with :

(a) A circle. (b) A rectangle.

(c) Square. (d) An arrow.

3. The critical path is :

(a) The longest path covering all activities.

(b) The shortest path covering all activities.

(c) Longest path.

(d) Shortest path.

4. EDL is the methods of measuring decision under :

(a) Risk. (b) Uncertainty.

(c) Certainty. **(d)** None of these.

B. Multiple choice :

5. If the player select the same strategy each time, then it is referred to as :

(a) Pure strategy. (b) Mixed strategy.

(c) Optimum strategy. (d) None of these.

Turn over

6. An activity which started immediately after one or more of other activities are completed is known as :

(a) Predecessor activity. (b) Successor activity.

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

7. PERT and CPM are :

(a) Network techniques. (b) LPP.

(c) Plan models. (d) None of these.

8. The equilibrium point in game theory is :

(a) Saddle. (b) Breakeven point.

(c) Pay off. (d) None of these.

C–Fill in the blanks :

9 LPP is a technique aimed at

10 _____ method is a combination of maximin criterion and maximax criterion.

11 The equation to find out the cost slope is

12 Bayecian theorem deals with _____

D–True *or* False :

13. Conditions for Maxima is $\frac{dy}{dx}=0, \frac{d^2y}{dx^2}<0$

14. Saddle point is associated with game.

15. Transportation problem is sub class of LPP.

16. Beals method is used for solving quadratic programming.

(16 x ¼ = 4 weightage)

Part B

Answer any **ten** *not exceeding* **one page** *each.*

17. Difference between PERT and CPM.

18. Discuss Kuhn-Tucker conditions.

19. "Economic interpretation of dual" . Explain.

20. Explain general structure of transportation problem.

21. Explain methodology of OR.

22. Explain the features of LPP.

23. Explain the decision making under risk and uncertainty.

24. What do you meant by dominance property ?

25. Distinguish between transportation problem and assignment problem.

26. Explain the methods of quadratic programming.

27. Write the dual of the following LPP :

Maximise $Z = 3X_1 + X_2$

subject to $X_1 + X_2 = 1$
$2X_1 + 3X_2$
$X_i, X_2 \_ 0.$

28. Distinguish between smoothing and leveling.

(10 x 2 = 20 weightage)

Part C (Essay questions)

Answer any **three** *not exceeding* **three pages** *each.*

29. Solve LPP graphically :

Maximize $Z = 4X_1 + 3X_2$

subject to $2X_1 + X_2 :5\_ 1000$
$X_i + X_2 \quad 800$
$X_1 \quad 400$
$X_2 \quad \_ 700$
$X_i, X_2 \quad 0.$

30. Evaluate graphical solution of 2 x n and m x 2 game.

31. What is a model ? State the different types of model used in OR.

32. Solve the problem using Vogel's approach method :

Warehouse / Plant	D	E	F	Available
P	30	20	10	800
Q	5	15	25	500
Required	300	300	400	

33. Solve the two person zero sum game and find the value of the game.

3	3	2
6	3	1
2	4	4

(3 x 4 = 12 wei