BRAINWARE UNIVERSITY

Term End Examination 2022
Programme – LLM-2022
Course Name – Quantitative Analysis
Course Code - LLM104
(Semester I)

Full Marks : 60 **Time : 2:30 Hours**

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question) 1 x 15=15

1. *Choose the correct alternative from the following :*

(i) Select from the followings the assumptions of game theory.

a) The players act rationally and intelligently
b) Each payer has a finite set of possible courses of action
c) The players attempt to maximise gains or minimises losses
d) All of the options

(ii) Assess matrix which shows the gains and losses resulting from moves and counter moves is called _____

a) Cost matrix
b) Pay off matrix
c) Gain matrix
d) Loss matrix

(iii) Identify the time when O.R. came into existence

a) World War I
b) India and Pakistan War
c) World War II
d) None of the Mentioned

(iv) Name the first country to use Operations Research method to solve problems

a) India
b) China
c) U.K.
d) U.S.A.

(v) Name objective function of a linear programming problem

a) a constraint
b) function to be obtimized
c) A relation between the variables
d) None

(vi) In a transportation problem, identify the number of____ and _____ becomes equal

a) destinations; sources
b) units supplied; units demanded
c) positive cost coefficients; negative cost coefficients
d) None of the Mentioned

(vii) Indicate which of the following is a method for improving an initial solution in a transportation problem

a) stepping-stone
b) northwest-corner

c) intuitive lowest-cost
d) southeast-corner rule

(viii) Express nature of the transportation problem

a) Maximization model
b) Minimization model
c) Transshipment problem
d) Iconic model

(ix) Determine in a transportation problem, we must make the number of _____ and _____ equal.

a) destinations; sources
b) units supplied; units demanded
c) columns; rows
d) positive cost coefficients; negative cost coefficients

(x) The initial solution to a transportation problem can be obtained by applying any known method. Interpret the only condition

a) The solution be optimal
b) The rim conditions are satisfied
c) The solution is not degenerate
d) All of the mentioned

(xi) Predict the probable addition in the dummy source or destination in a transportation problem

a) satisfy rim conditions
b) prevent solution from becoming degenerate
c) ensure that total cost does not exceed a limit
d) None

(xii) Consider a transportation problem with 3 supply points and 4 demand points. Select the number of constraints, the formulation has

a) 3
b) 6
c) 7
d) 10

(xiii) Identify the Critical Path as a

a) Is the longest path
b) Is the shortest path
c) Is a mixture of all paths
d) Is a path that operates from the starting node to the end node

(xiv) Devise the probability distribution taken to represent the completion time in PERT analysis

a) gamma distribution
b) normal distribution
c) beta distribution
d) log-normal distribution

(xv) Devise the probability that is considered for expected activity duration in connection with PERT

a) 0.33
b) 0.5
c) 0.67
d) 0.99

Group-B

(Short Answer Type Questions) 3 x 5=15

2. Describe the possible use of dummy activity in networking diagram (3)
3. Explain Mixed Strategy in Game theory with a suitable example (3)
4. Explain two-person zero sum game. (3)
5. Estimate the ˜Dummy Activity" with a diagram. (3)
6. Devise the terminology: (a) slack variable (b)surplus variable. (3)

OR

Compose the duality theory of linear programming. (3)

Group-C

(Long Answer Type Questions) 5 x 6=30

7. List the differences between PERT and CPM (5)
8. Illustrate with a diagram the fundamental differences between an activity and an event. (5)
9. Judge the needs of Transportaion problem in connection with social science. (5)

10. Assess and interpret socio legal problems by applying knowledge of Game Theory (5)
11. Evaluate the use of big M method in solving LPP with an example (5)
12. Assess the "Test of Optimality" concept in brief. (5)

OR

Assess the dominance rule with an example. (5)

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