

19U645

(Pages: 3)

Name:

Reg. No:

SIXTH SEMESTER B.B.A. DEGREE EXAMINATION, APRIL 2022

(CBCSS - UG)

CC19U BBA6 B13 - MANAGEMENT SCIENCE

(Commerce - Core Course)

(2019 Admission - Regular)

Time: 2.5 Hours

Maximum: 80 Marks

Credit: 4

Part A (Short answer questions)

Answer *all* questions. Each question carries 2 marks.

1. State the importance of OR.
2. What do you mean by Proportionality in LP?
3. List out any 2 disadvantages of L.P.P.
4. State the meaning of a project.
5. Determine the various uses of network techniques for management.
6. Represent predecessor activity graphically.
7. State the concept of optimistic time estimate.
8. State any two demerits of network techniques.
9. What do you mean by decision theory?
10. State the meaning of Criterion of optimism.
11. Discuss Laplace criterion.
12. What is Expected Value of Perfect Information (EVPI)?
13. What do you mean by Game theory?
14. Illustrate transportation problem in the form of LPP.
15. Discuss basic feasible solution under transportation problem.

(Ceiling: 25 Marks)

Part B (Paragraph questions)

Answer *all* questions. Each question carries 5 marks.

16. Quote the scope of OR.
17. Elaborate the phases of OR.
18. Explain the requirement for employing linear programming technique.
19. A small ink manufacturer produces a certain type of ink at a total average cost of Rs. 3 per bottle and sells at a price of Rs. 5 per bottle. The ink is produced over the week-end and is sold during the following week. According to the past experience the weekly demand has never been less than 78 or greater than 80 bottles in this place. You are required to formulate pay off table.

20. The activities involved in the computer installation process are detailed below. You are required to draw the network

Activity	Predecessor Activities
A (physical preparation)	None
B (Organisational planning)	None
C (personnel selection)	B
D (Equipment installation)	A
E (Personnel training)	C
F (Detailed system design)	C
G (File conversion)	F
H (Establishing standard and controls)	F
I (Programme preparation)	H
J (Parallel testing)	I
K (Parallel operations)	D,E,G,J
L (Finalise system)	I
M (Follow up)	K,L

21. A business man is trying to decide whether to take one of two contracts or neither and simplified the situation into two alternatives.

Contract A		Contract B	
Profit (Rs.)	Probability	Profit (Rs.)	Probability
100	.2	200	.3
50	.4	10	.4
0	.3	-10	.3
-30	.1		

(a) Which contract he should select if he wishes to maximise his expected profit?

(b) What is the expected profit associated with the optimal decision?

22. Determine initial basic feasible solution of the transportation problem by lowest cost entry method.

Origin	Destinations				Supply
	A	B	C	D	
1	1	5	3	3	34
2	3	3	1	2	15
3	0	2	2	3	12
4	2	7	2	4	19
Demand	21	25	17	17	

23. List out the steps in Vogel's Approximation Method.

(Ceiling: 35 Marks)

Part C (Essay questions)

Answer any *two* questions. Each question carries 10 marks.

24. A company sells two different products A and B. The company makes a profit of Rs. 400 and Rs. 300 per unit on products A and B respectively. The two products are produced in a common production process and are sold in two different markets. The production process has a capacity of 30,000 man hours. It takes 300 man hours to produce a unit of A and 100 man hours to produce a unit of B. The company estimates that the maximum number of units of A that can be sold is 80 and that of B is 120 units. Subject to these limitations, the product can be sold in any combinations. Find the optimum product mix. Formulate LPP and solve graphically.

25. Explain in detail Critical Path Method.

26. A person has two independent investments A and B available to him but he can undertake only one at a time due to certain constraints. He can choose A first and then stop or if A is successful then take B or vice versa. The probability of success of A is 0.6 while for B it is 0.4. Both investments require an initial capital outlay of Rs. 10000 and both return nothing if the venture is unsuccessful. Successful completion of A will return Rs. 20000 (over cost) and successful completion of B will return 24000 (over cost) Draw decision tree and determine the best strategy.

27. Solve the following transportation problem to maximise profit.

	A	B	C	D	Available
1	40	25	22	33	100
2	44	35	30	30	30
3	38	38	28	30	70
Required	40	20	60	30	

(2 × 10 = 20 Marks)
