B.C.A. DEGREE EXAMINATION,APRIL 2020
III Year V Semester
Resource Management Technique

Time : 3 Hours   **Max.marks :75**

Section A $(10 \times 2 = 20)$ Marks

Answer any **TEN** questions

1. Write the canonical form of LPP.
2. Define a feasible solution.
3. Define a balanced Transportation problem.
4. Define Unbalanced assignment problem. How do you make it balanced?
5. What is the objective of sequencing problem?
6. Define a TSP.
7. Define Saddle point.
8. Define Zero sum game.
9. Write the benefits of PERT
10. Write the limitations of CPM
11. What are the components in mathematical model of an LPP?
12. Define Optimal solution.

Section B $(5 \times 5 = 25)$ Marks

Answer any **FIVE** questions

13. List down the applications of OR.
14. Describe North West Corner method.
15. What are the conditions for solving a sequencing problem.
16. A salesman has to visit five cities A,B,C,D, and E.

Table

		To city				
		A	B	C	D	E
	A	-	1	6	8	4
From	B	7	-	8	5	6
City	C	6	8	-	9	7
	D	8	5	9	-	8
	E	4	6	7	8	-

If the salesman starts from city A and has to come back to city A. which route should be select so that total distance traveled minimum.

17. Describe about Minimax method.

18. Solve the following game

Player A $\begin{bmatrix} 12 & 1 & 30 & -10 \\ 20 & 3 & 10 & 5 \\ -5 & -2 & 25 & 0 \\ 15 & -4 & 10 & 6 \end{bmatrix}$ Player B

19. Write down the applications of PERT and CPM.

Section C $(3 \times 10 = 30)$ Marks

Answer any **THREE** questions

20. Solve the given LPP using graphical method Min z=180x+160y Subject to $6x + y \geq 12\ 3x + y \geq 8\ 4x + 6y \geq 24\ x \leq 5,\ y \leq 5\ \&\ x, y \leq 0$

21. Solve by using North West Corner rule

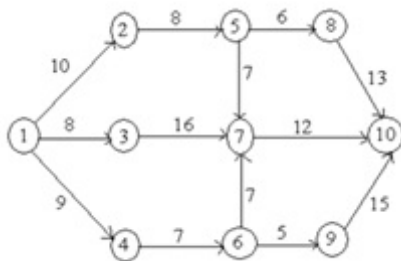| Company	R1	R2	R3	R4	Supply
P1	3	5	7	6	50
P2	2	5	8	2	75
P3	3	6	9	2	25
Demand	20	20	50	60	

(Retail columns: R1, R2, R3, R4)

22. There are 5 jobs J1,J2,J3,4and J5 going through machines A,B.

Job:	J_1	J_2	J_3	J_4	J_5
Machine A:	2	4	5	7	1
Machine B:	3	6	1	4	8

Determine the minimum elapsed time and idle time for each of the machines.

23. Identify the critical path for the following network

24. Explain about two person zero sum games with examples.

B.C.A. DEGREE EXAMINATION,APRIL 2020
III Year V Semester
Resource Management Technique

Time : 3 Hours   **Max.marks :75**

Section A $(10 \times 2 = 20)$ Marks

Answer any **TEN** questions

1. Write the canonical form of LPP.
2. Define a feasible solution.
3. Define a balanced Transportation problem.
4. Define Unbalanced assignment problem. How do you make it balanced?
5. What is the objective of sequencing problem?
6. Define a TSP.
7. Define Saddle point.
8. Define Zero sum game.
9. Write the benefits of PERT
10. Write the limitations of CPM
11. What are the components in mathematical model of an LPP?
12. Define Optimal solution.

Section B $(5 \times 5 = 25)$ Marks

Answer any **FIVE** questions

13. List down the applications of OR.
14. Describe North West Corner method.
15. What are the conditions for solving a sequencing problem.
16. A salesman has to visit five cities A,B,C,D, and E.

Table

		To city				
		A	B	C	D	E
From City	A	-	1	6	8	4
	B	7	-	8	5	6
	C	6	8	-	9	7
	D	8	5	9	-	8
	E	4	6	7	8	-

If the salesman starts from city A and has to come back to city A. which route should be select so that total distance traveled minimum.

17. Describe about Minimax method.

18. Solve the following game

Player B

Player A $\begin{bmatrix} 12 & 1 & 30 & -10 \\ 20 & 3 & 10 & 5 \\ -5 & -2 & 25 & 0 \\ 15 & -4 & 10 & 6 \end{bmatrix}$

19. Write down the applications of PERT and CPM.

Section C $(3 \times 10 = 30)$ Marks

Answer any **THREE** questions

20. Solve the given LPP using graphical method Min z=180x+160y Subject to $6x + y \geq 12 \; 3x + y \geq 8 \; 4x + 6y \geq 24 \; x \leq 5, \; y \leq 5 \; \& \; x, y \leq 0$
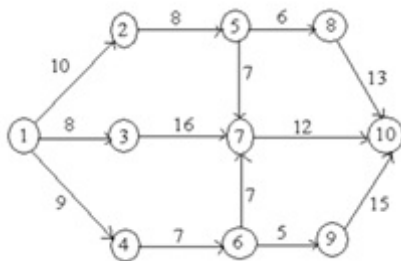
21. Solve by using North West Corner rule

Company	Retail R1	R2	R3	R4	Supply
P1	3	5	7	6	50
P2	2	5	8	2	75
P3	3	6	9	2	25
Demand	20	20	50	60	

22. There are 5 jobs J1,J2,J3,4and J5 going through machines A,B.

Job:	J_1	J_2	J_3	J_4	J_5
Machine A:	2	4	5	7	1
Machine B:	3	6	1	4	8

Determine the minimum elapsed time and idle time for each of the machines.

23. Identify the critical path for the following network

24. Explain about two person zero sum games with examples.