

B.B.A. Semester - 5 (Remedial) (CBCS) Examination**March/April-2022 (NEW COURSE)****Statistics Group - Fundamentals of Operations Research(Elective)****Time: 2:30 Hours****Marks: 70****Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate marks.

- Que-1 (A) Explain in brief Vogel's approximation Method. (14)
 (B) When is the solution to a problem said to be a "degenerate One"? How will one overcome the problem?

OR

- Que-1 Solve the transportation problem

		Cost per truck load (;000:Rs.)			
Plant		A	B	C	requirement
W		8	16	16	152
X		32	48	32	164
Y		16	32	48	154
Available		144	204	82	

- Que-2 (A) How you Solve A problem Of Maximization in Assignment Problem? (14)
 (B) What is Assignment Problem?

OR

- Que-2 Solve the Assignment problem.

	A	B	C	D
1	120	100	80	90
2	80	90	110	70
3	110	140	120	100
4	90	90	80	90

- Que-3 (A) What is L.P.P? Explain it (14)
 (B) Explain Simplex Method

OR

- Que-3 Solve the problem by Simplex Method.

$$\text{Max } Z = 2X_1 + 5X_2$$

Subject to constraint

$$x_1 + 4X_2 \leq 24$$

$$3x_1 + X_2 \leq 21$$

$$x_1 + X_2 \leq 9$$

$$X_1, X_2 \geq 0$$

- Que-4 (A) Give the difference between simplex method and graphic method. (14)
 (B) How you solve minimization problem in graphic method.

OR

- Que-4 A product must produce 200 kg. of mixture consisting of ingredients X 1 And X2.
 The ingredients X1 cost Rs.3 per kg and X2 cost Rs. 5 per kg. not more than 80 kg. of X1 can be used and at least 60 kg. of X2 must be used. Find minimum cost mixture. Formulate and solve graphically

- Que-5 (A) What is Operations research? (14)
 (B) Explain characteristics of O.R.

OR

- Que-5 (A) Give limitations of O.R.
 (B) Explain role of O.R. in Business
