



BCO-161100010510 Seat No. _____

B. B. A. (Sem. V) (CBCS) (WEF-2016) Examination

August - 2021

Statistics

(Fundamentals of Operation Research)

(New Course)

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

- Instructions :** (1) Each question carries equal marks.
(2) Answer any five questions.

- 1 Explain the models of O.R. 14
- 2 Explain : Criteria of good research. 14
- 3 What is L.P.P? State the uses of a L.P. 14
- 4 Use the graphical method to solve the following L.P.P. 14
 $Z_{\max} : 2x + y$
S. to C : $x + y \leq 10, x + y \leq 6, x - y \leq 2, x - 2y \leq 10, x, y \geq 0$
- 5 Discuss in brief duality in L.P. 14
- 6 Use the simplex method to solve the following LPP. 14
 $Z_{\max} : 3x_1 + 5x_2 + 4x_3$
S to C : $2x_1 + 3x_2 \leq 8, 2x_2 + 5x_3 \leq 10,$
 $3x_1 + 2x_2 + 4x_3 \leq 15, x_1 + x_2, x_3 \geq 0$
- 7 Explain MODI method. 14

- 8 Using VAM obtain the initial basic feasible solution of the following T.P. 14

		Market				
		M1	M2	M3	M4	Availability
Plants	P1	7	4	3	4	25
	P2	3	2	7	5	25
	P3	4	4	3	7	20
	P4	9	7	5	3	30
Requirement		12	8	25	25	

- 9 Explain : Hungarian method for solving on A.P. 14
- 10 Using the following cost matrix determine optimist job assignment and the cost of assignment. 14

		Job				
		1	2	3	4	5
Worker	A	10	3	3	2	8
	B	9	7	8	2	7
	C	7	5	6	2	4
	D	3	5	8	2	4
	E	9	10	9	6	10