

B.B.A. Semester - 5 (Remedial) (CBCS) Examination**Feb/Mar. -2021 (OLD COURSE)****STATISTICS GROUP: FUNDAMENTALS OF OPERATION RESEARCH(ELECTIVE)****Time: 1:30 Hours****Marks: 42****Instructions:**

1. Figures to the right indicate marks.
2. There are five questions in the question paper.
3. Answer any three of the following questions.

Q.1 (A) What is O.R? State its characteristics (07)

(B) Explain the applications of O.R. (07)

Q.2 (A) Explain the hungarian method of solving an assignment problem. (07)

(B) Explain the difference between an A.P. and a T.P. (07)

Q.3 Solve the following T.P. by N-W corner method. (14)

From\To	W_1	W_2	W_3	W_4	Supply
F_1	12	10	12	13	500
F_2	7	11	8	14	300
F_3	6	16	11	7	200
Demand	180	150	350	320	

Q.4 Solve the following L.P.P. using graphic method. (14)

$$\text{Maximize } Z = 80x_1 + 120x_2$$

$$\text{Sub. to } x_1 + x_2 \leq 9$$

$$x_1 \geq 2$$

$$x_2 \geq 3$$

$$20x_1 + 50x_2 \leq 360$$

$$x_1, x_2 \geq 0$$

Q.5 (A) Define : (1) Slack Variable (07)

(2) Surplus Variable

(3) Artificial Variable

(B) Explain simplex method for solving a L.P.P. (07)
