

U.G. 5th Semester Examination - 2020**STATISTICS****(HONOURS)****Discipline Specific Elective (DSE)****Course Code : STATH-DSE-2/PR****[PRACTICAL]****(Operations Research-Lab)**

Full Marks : 25(20+5)

Time : 2 Hours

The figures in the right-hand margin indicate marks.

1. Consider the following 4 x 3 transportation problem:

Supply

2	7	4	5
3	3	1	8
5	4	7	7
1	6	2	14

Demand 7 9 18

A feasible solution is given as: $x_{11} = 5$, $x_{21} = 2$, $x_{22} = 6$, $x_{32} = 3$, $x_{33} = 4$, $x_{43} = 14$.

- a) Examine if the above solution is a basic feasible solution.
- b) Examine if this solution is optimal or not.

- c) If the solution is not optimal, obtain a better solution. 5

2. An item sells at \$25 a unit, but a 10% discount is offered for lots of 150 units or more. A company uses this item at the rate of 20 units per day. The setup cost for ordering a lot is \$50, and the holding cost per unit per day is \$.10. The lead time is 10 days. Should the company take advantage of the discount? 5
3. Practical Note book 5
4. Viva-voce 5

[Internal Assessment: 5]*[Turn Over]*