

## JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

Make up EXAMINATION- April 2018

B.Tech VIII Semester (All Branches)

COURSE CODE: 11B1WMA832

MAX. MARKS: 25

COURSE NAME: Linear Programming and Applications

COURSE CREDITS: 03

MAX. TIME: 1.5 Hrs

*Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means. Each question is of 5 Marks.*

Q1. Find all the Basic Feasible solutions of the system

$$8x_1 + 6x_2 + 13x_3 + x_4 + x_5 = 6 \text{ and } 9x_1 + x_2 + 2x_3 + 6x_4 + 10x_5 = 0$$

Q2. Solve the LPP  $\text{Max } Z = -x_1 - x_2$ 

$$\text{s.t } 3x_1 + 2x_2 \geq 30, -2x_1 + 3x_2 \leq -30, x_1 + x_2 \leq 5 \text{ and } x_1, x_2 \geq 0$$

Q3. Write Mathematical form of Transportation problem.

Q4. Find Basic feasible solution of Transportation problem using North west corner rule and Vogel's approximation method.

From/To	1	2	3	Available
A	6	10	15	1
B	4	6	16	1
C	12	5	8	3
Required	2	2	1	

Q5. Solve the Assignment problem

Job/Person	A	B	C	D	E
1	2.5	5	1	6	1
2	2	5	1.5	7	3
3	3	6.5	2	8	3
4	3.5	7	2	9	4.5
5	4	7	3	9	6
6	6	9	5	10	6