

BACHELOR OF VOCATION
BPM & Analytics
Subject: Introduction to Operations Research
Subject Code: GBGE-202
Semester: Third
January 2021
Theory (External): 70 Marks
Time: 03 Hours

Instructions to the Students

1. This Question paper consists of two Sections. All sections are compulsory.
2. Section A comprises 10 questions of objective type in nature. All questions are compulsory. Each question carries 2 marks.
3. Section B comprises 8 essay type questions out of which students need to do any 5. Each question carries 10 marks.
4. Read the questions carefully and write the answers in the answer sheets provided.
5. Do not write anything on the question paper.
6. Wherever necessary, the diagram drawn should be neat and properly labelled

Roll Number											



SECTION –A (SHORT/OBJECTIVE TYPE QUESTIONS)
(10x2=20 Marks)

- A. What steps are involved in operation research problem?
- B. Write four advantages of operation research models.
- C. Define simplex method.
- D. Define Slack and artificial variables.
- E. Explain in brief 'North West Corner Rule'.
- F. Write the steps of Hungarian Assignment Method (HAM).
- G. Define PERT.
- H. What do you mean by Dummy Activity?
- I. What is opportunity loss cost?
- J. Write four limitations of game theory.



SECTION -B (ESSAY TYPE QUESTIONS)
(5x5=25 Marks)

1. "Operation researches are the eyes of management." Explain.
2. Explain the concept of linear programming. State the areas in which linear programming is applied.
3. Every effort made for betterment is always good for ever." State the working of simplex method in the light of above statement.
4. What do you mean by transportation model? Explain the method of obtaining initial feasible solution for a transportation problem.
5. Write a short note on:
 - a) The travelling salesman problem
 - b) Unbalanced assignment problem

6. Solve the following '2 person zero-sum' game and find the optimal strategies for each of the players and the value of the game:

A \ B	B1	B2	B3
A1	15	8	10
A2	10	12	15
A3	10	10	15

7. Solve the following linear programming problem by simplex method:
Minimise: $Z=60Y_1+80Y_2$
Subject to: $Y_2 \geq 200$
 $Y_1 \leq 400$
 $Y_1+Y_2=500$
 $Y_1, Y_2 \geq 0$
8. "The game theory provides the basis for a rational decision". Do you agree with this statement? Answer with reasons

*****END OF PAPER*****