

**MAHARASHTRA ANIMAL AND FISHERY SCIENCES UNIVERSITY, NAGPUR**  
**SEMESTER END THEORY EXAMINATION, B. Tech. (DT)**

Semester	: V (V Dean)	Academic Year	: 2024-2025
Course No.	: DBM-507	Course Title	: <b>ICT in Dairy Industry and Operations Management</b>
Credits	: 2+2=4	Total Marks	: 50
Day & Date	: Tuesday, 29/04/2025	Time	: 2.00 hrs.

- Note :**
- 1) All questions from **Section 'A'** are compulsory.
  - 2) Solve **Any Three** questions from **Section 'B'**.
  - 3) Draw a neat and well-labeled diagrams wherever necessary.

**SECTION –‘A’**

- Q. 1 A) Define the following. (05)
- i) Infeasible Solution
  - ii) Degenerate Solution
  - iii) Operation Research
  - iv) Deterministic Model
  - v) Linear Programming
- B) Answer in one line. (05)
- i) PERT
  - ii) CPM
  - iii) Surplus Variable
  - iv) Slack Variable
  - v) Stack and Queue
- Q. 2 A) State whether True or False. If false, rewrite the statement after making necessary corrections. (05)
- i) All variables in the linear programming problem should not take negative values.
  - ii) The graphical method of solving linear programming problem has its limited applicability to many real life situations.
  - iii) A dummy row or column is introduced in the transportation method in order to handle an Unbalanced problem.
  - iv) The problem which is used to disburse the available limited resources to activities is known as resources model.
  - v) In Sequencing problem each machine is of different type.
- B) Choose the most appropriate answer from the options given below. (05)
- i) Operation Research which is a very powerful tool for .....
    - a) Research
    - b) Decision-making
    - c) Operations
    - d) None of these
  - ii) The objective functions and constraints are linear relationship between .....
    - a) Variable
    - b) Constraints
    - c) Functions
    - d) All of these

(P.T.O.)



- iii) A value which does not change from one individual to another individual is called .....
- a) Variable
  - b) Constraints
  - c) Statistics
  - d) Array
- iv) A physical model is example of .....
- a) An iconic model
  - b) A verbal model
  - c) An analogue model
  - d) A mathematical model
- v) Operations Research cannot give perfect ..... to problem.
- a) Answers
  - b) Solutions
  - c) Both a) and b)
  - d) Decisions

### SECTION –‘B’

- Q. 3 A) What is Operation Research and explain the history of operation research. (05)  
B) Write a short note on history of operation research. (05)
- Q. 4 A) Differentiate between FIFO (First in First Out) and LIFO (Last in First Out). (05)  
B) What are the Characteristics of operation research. (05)
- Q. 5 A) Explain the Queuing theory in detail. (03)  
B) Probability distribution of queuing. (03)  
C) What is Stack and Queue. (04)
- Q. 6 A) Discuss the application of OR in decision making. (03)  
B) Explain the Scope, applications and Limitations of Operation Research. (03)  
C) What is Transportation Problem. (04)
- Q. 7 Write the frame work of PERT and CPM. Explain their events and activities with suitable examples. (10)

\*\*\*\*\*