Roll No. ....

Y – 2864

M.B.A (Second Semester) EXAMINATION, May/June-2021

Paper – 204

OPERATIONS RESEARCH

Time : Three Hours

Maximum Marks : 70   *Minimum Pass Marks : 28*

Note—Attempt *all* questions. All questions carry equal marks.

Unit-I

1.   Discuss uses of operations research in modern business decision making process.

An operations research provide bad answers to worse answers justify.   14

Unit-II

2.   Solve the problem by graphical method   14

Max $Z = 5x + 8y$

Subject to $3x + 2y \leq 36$

$x + 2y \leq 20$

$3x + 4y \leq 42$

$x, y \geq 0$

Unit-III

3.   Solve the following game   14

Player B

$$\text{Player A} \begin{bmatrix} 1 & 7 & 2 \\ 6 & 2 & 7 \\ 5 & 1 & 6 \end{bmatrix}$$

P.T.O.

Unit-IV

4. Find the sequence that minimizes the total elasped time in (hour) required to complete the following tasks on two machines—   14

Task	A	B	C	D	E	F	G	H	I
Machine I	2	5	4	9	6	8	7	5	4
Machine II	6	8	7	4	3	9	3	8	11

Unit-V

5. The following mortality rates have observed for a certain type of light bulbs.

Week	1	2	3	4	5
% failing by the end of week	10	25	50	80	100

There are 1000 bulbs in use and it costs Rs. 2 to replace an individual bulb, which has burnt out. If all the bulbs were replaced simultaneously it would cost 50 paise per bulb. It is proposed to replace all the bulbs at fixed intervals, whether or not they have burnt out and to continue replacing burnt out bulbs as they fail. At what intervals should all the bulbs be replaced ?   14