(Printed Pages 4)

(20518)

Roll No......................

BBA-IV Sem.

18060

B.B.A. Examination, May-2018

Operation Research

(BBA-406)

(New)

Time : Three Hours]   *[Maximum Marks : 75*

Note : Attempt questions from **all** Sections as per instructions. Calculator may be used.

Section-A

(Very Short Answer Questions)

Note : Attempt all the **five** questions. Each question carries **3** marks. Very short answer is required not exceeding 75 words.   3×5=15

1. What is Operation Research?

2. What do you mean by MODI method?

3. Explain North West Corner Rule of Transportation Problem.

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4. Explain PERT.

5. Explain CPM.

Section - B

(Short Answer Questions)

Note : Attempt any **two** questions out of the following three questions. Each question carries 7½ marks. Short answer is required not exceeding 200 words.

7½×2=15

6. Discuss the Nature, Definition & Characteristics of Operations Research.

7. Consider the problem of assigning 5 jobs to 5 persons. The costs are given as below :

Persons	Jobs				
	1	2	3	4	5
A	8	4	2	6	1
B	0	9	5	5	4
C	3	8	9	2	6
D	4	3	1	0	3
E	9	5	8	9	5

8. Discuss the Applications areas of Linear Programming.

18060\2

Section-C
(Detailed Answer Questions)

Note : Attempt any **three** questions out of the following **five** questions. Each question carries 15 marks. Answer is required in detail. $15 \times 3 = 45$

9. Maximise $Z = 28x_1 + 30x_2$

    Subject to
    $$6x_1 + 3x_2 \le 18$$
    $$3x_1 + x_2 \le 8$$
    $$4x_1 + 5x_2 \le 30$$
    $$x_1, x_2 \ge 0$$

10. Find an optimal solution to the following transportation problem :

Sources	Destination			Supply
	X	Y	Z	
A	2	7	4	50
B	3	3	7	70
C	5	4	1	80
D	1	6	2	140
Demand	70	90	180	340

18060\3

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11. What do you mean by unbalanced transportation problem? Explain how to convert the unbalanced transportation problem in to a balanced transportation problem.

12. Explain clearly the difference between the following :

    (i) Pay-off and Opportunity Loss

    (ii) Expected Monetary Value and Expected Opportunity Loss.

    (iii) Maximin and Maximax decision-rules.

13. Discuss any two methods of finding initial solution of a transportation problem and two areas of application for them.

18060\4