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(20525)
BBA-VI Sem.

(Printed Pages 4)
Roll No.

18107

B.B.A. Examination, May-2025

OPERATION RESEARCH

(BBA-602)

(New Course)

Time : Three Hours]

[Maximum Marks : 75

Note : Attempt questions **all** the sections as per instructions.

Section-A

(Very Short Answer Type Questions)

Note : This section contains **five** questions, all questions will be **compulsory**. Each question contains 3 marks.

$5 \times 3 = 15$

1. What do you mean by operation research?
2. What are the advantages of linear programming?
3. What is transportation problem?

P.T.O.

4. Discuss decision tree approach & its applications.
5. Discuss network analysis.

Section-B

(Short Answer Type Questions)

Note : This section contains **three** questions, attempt any **two** questions. Each question carries **7.5** marks. $2 \times 7.5 = 15$

6. Maximise $z = 8x + 6y$
 Subject to constraints $4x + 2y \leq 60$
 $2x + 4y \leq 48$
 where x and $y \geq 0$
7. The following table gives processing times of 6 jobs on two machines A and B. Each item has to be processed first on Machine A and then on Machine B. Prepare a processing schedule which minimize total elapsed time.

Jobs	1	2	3	4	5	6
Machine A (Time Hours)	10	12	9	10	6	9
Machine B (Time Hours)	6	7	8	12	9	10

8. Explain PERT & CPM.

Section-C

(Descriptive Answer Type Questions)

Note : This section contains **five** questions, attempt any **three** questions. Each question carries **15** marks. Answer must be descriptive. $3 \times 15 = 45$

9. What do you understand by unbalanced transportation problem? How would you convert its into balanced transportation problem? Discuss in brief north west corner rule to obtain initial feasible solution.

10. Use simplex method to solve the following L.P.P.

$$\text{Maximise } z = 6x_1 + 8x_2$$

Subject to

$$30x_1 + 20x_2 \leq 300$$

$$5x_1 + 10x_2 \leq 110$$

11. Find the initial basic feasible solution of the following transportation problem using lowest cost entry method.

Warehouse

	W_1	W_2	W_3	Supply
Factory 1	7	6	9	20
Factory 2	5	7	3	28
Factory 3	4	5	8	17
Demand	21	25	19	65

12. Discuss the nature, characteristics and application of operation research.
13. A project has the following time schedule:

Activity	Time (days)	Activity	Time (days)
1-2	2	4-6	3
1-3	2	5-8	1
1-4	1	6-9	5
2-5	4	7-8	4
3-6	8	8-9	3
3-7	5		

Construct PERT Network and compute critical path and its duration.