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(20526)
BBA-VI Sem.

(Printed Pages 4)
Roll No.

18107
B.B.A. Examination, May-2026
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 carries 3 marks.

$$5 \times 3 = 15$$

1. Discuss OR techniques.
2. What is Linear Programming?
3. Discuss degeneracy problems.
4. Discuss Minimax Regret.
5. What is CPM?

P.T.O.

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. Five jobs are performed first on machine x and then on machines y. The time taken (in hours) by each job on each machine is given below :

Jobs	: A	B	C	D	E
Time on Machine x	: 12	4	20	14	22
Time on Machine y	: 6	14	16	18	10

Determine the optimum sequence of jobs that minimize the total elapsed time to complete the jobs. Also compute the minimum time.

7. Solve L.P.P. by simplex method-

Maximize $z = 6x + 11y$

Subject to the constraints-

$$2x + y \leq 104$$

$$x + 2y \leq 76$$

$$x, y \geq 0$$

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

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. Determine an initial basic feasible solution to the following transportation problem using north-west corner method and also find out the total transportation Cost.

Factory	Warehouse			
	I	II	III	Capacity
A	19	16	12	14
B	22	13	19	16
C	14	28	8	12
Demand	10	15	17	42

10. How will you solve a linear programming problem by graphical method, explain by an example.
11. Explain decision making under uncertainty. Discuss Decision Tree approach & its applications.

12. Solve the following assignment problem so as to minimize total time taken.

	A	B	C	D	E
I	22	34	12	32	40
II	18	14	24	10	32
III	06	32	30	24	52
IV	02	48	34	56	30
V	28	20	24	22	30

13. The following table gives the pay-offs of three acts- A_1 , A_2 and A_3 and three states of nature Q_1 , Q_2 , & Q_3 and the prior probabilities associated with the states of nature. Calculate the expected monetary values and decide as to which course of action is the best one :

States of Nature	Probabilities	Alternative Acts-A		
		A_1	A_2	A_3
Q_1	0.1	25	-10	-125
Q_2	0.7	400	440	400
Q_3	0.2	650	740	750