

2/21

0205N186

Candidate's Seat No : _____

IMBA in FM/HRPA/BM/BEM Sem.-4 (Rep.) Examination
BEM/HR/FM/BBA_CC_204

OR

Time : 2-30 Hours]

May-2025

[Max. Marks : 70

Q1. Explain operation research, state its real world example? 14

Q2. Solve the following L.P.P. 14

Max $Z = 6x + 3y$ with graphical method,

Subjects to the constrain are:

$$x + 2y \leq 600$$

$$3x + y \leq 750$$

$$X \leq 300, y \leq 400, x \geq 0, y \geq 0$$

OR

Q.2 Solve the following with simplex method:

$$\text{Max } Z = 45x + 80y$$

and the constraints are :

$$5x + 20y \leq 400,$$

$$10x + 15y \leq 450,$$

$$x \geq 0, y \geq 0$$

Q3 Consider the transportation problem given below. Solve this problem with MODI method using NWCR: 14

ORIGIN	D1	D2	D3	D4	SUPPLY
O1	4	2	6	5	300
O2	7	3	5	4	250
O3	3	6	2	7	450
DEMAND	250	300	200	250	

(P.T.O)

OR

N/86-2

Q.3 Five different production processes are available to produce five different product. From past record the number of units produced by different production processes are given below, solve it with assignment problem

Jobs	Machine A	Machine B	Machine C	Machine D	Machine E
1	9	22	58	11	19
2	43	78	72	50	63
3	41	28	91	37	45
4	74	42	27	49	39
5	36	11	57	22	25

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Q.4 The cost price of Machine is 5000 and its Maintenance cost and scrape value given as follows, then after how many years it should be replaced when rate of return is 10%

Years								
Maintenance cost	1300	1500	1700	2000	2400	2800	3300	3900
Scrap value	4000	3000	2100	1500	1000	600	600	600

OR

Q.4 What is PERT and CPM, Difference between PERT and CPM?

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Q.5. A system for accounting and inventory control is to be introduced in restaurant. A computer company gives the following information :

Sequence	Optimistic time	Most likely time	Pessimistic time
1-2	4	6	8
2-3	5	7	15
2-4	4	8	12
3-5	15	20	25
4-5	10	18	26
4-6	8	9	16
5-7	4	8	12
6-7	1	2	3
7-8	6	7	8

Find the Expected time of the activity and determine the critical path?
