

(6 pages)

Reg. No. :

Code No. : 7947

Sub. Code : HBAM 41

M.B.A. (CBCS) DEGREE EXAMINATION,
APRIL 2016.

Fourth Semester

Business Administration

OPERATIONS RESEARCH

(For those who joined in July 2012 and afterwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. _____ is not a phase of Operations Research.
(a) Operations (b) Judgement
(c) Research (d) Action
2. Constraints are _____.
(a) Objective function (b) Decision variables
(c) Parameters (d) Limiting factors

3. _____ method is not used to find the initial solution in transportation model.
(a) MODI (b) NWC Rule
(c) Least cost (d) VAM
4. In an assignment problem, the objects have to be assigned on a _____ basis to other object.
(a) One to Many (b) Many to Many
(c) Many to One (d) One to One
5. Inventory means _____.
(a) Raw materials (b) Work-In-Progress
(c) Finished Goods (d) All of these
6. Carrying costs are also called as _____.
(a) Holding costs (b) Ordering costs
(c) Acquisition costs (d) Shortage costs
7. In decision analysis, events that may occur but which the decision maker cannot control are referred to as _____.
(a) Probability (b) Pay-off table
(c) Decision Tree (d) States of Nature



8. A graphical representation of decision making process is called _____.
- (a) Decision tree (b) Decision table
(c) Decision model (d) Decision making
9. Waiting line is called
- (a) Simulation (b) Game
(c) Decision tree (d) Queue
10. Customers refusing to join the queue because of its length is called _____.
- (a) Balking (b) Reneging
(c) Jockeying (d) Cycling

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) What are the steps in problem solving?
- Or
- (b) List out the applications of mathematical models.
12. (a) What is an assignment problem?
- Or
- (b) Explain the algorithm of Least Cost Method.

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13. (a) What are the assumptions of waiting line?
- Or
- (b) What are the applications of PERT?
14. (a) How will you compute saddle point in a game?
- Or
- (b) What is probabilistic EOQ model?
15. (a) What is Monte Carlo Simulation?
- Or
- (b) What are the applications of decision theory?

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 600 words.

16. (a) Explain the concept of dual of L.P.P. with an example.

Or

- (b) Solve the L.P.P. by graphical method.

Minimize $Z = 8x + 12y$

Subject to

$$5x + 2y \geq 20$$

$$4x + 3y \geq 24$$

$$y \geq 2$$

$$x, y, \geq 0$$

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17. (a) Solve the transportation problem by VAM.

Source	Destination			Supply
	1	2	3	
1	25	45	10	200
2	30	65	15	100
3	15	40	55	400
Demand	200	100	300	

Or

- (b) Solve Question 17 (a) by Least Cost Method.

18. (a) Explain the Characteristic of Queuing System.

Or

- (b) Construct a network diagram for the data given below.

Activity	Immediate Predecessor	Time (in days)
A	—	10
B	A	7
C	A	5
D	A	6
E	B	5
F	C	12
G	D, E, F	8

Determine the critical path and the total time to complete the project.

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19. (a) Explain the various inventory models.

Or

- (b) Solve the game and find the strategies of player A and B.

$$A \begin{matrix} & B \\ \begin{pmatrix} 6 & (-2) & 3 \\ 4 & (-3) & (-2) \end{pmatrix} \end{matrix}$$

20. (a) Explain the concept of Pay off tables.

Or

- (b) Discuss the types of Simulation.

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