63/2 (SEM-3) MCO 303

2022

(Held in 2023)

COMMERCE

(Theory Paper)

Paper Code : MCO-303

(Operation Research and Computer Application)

Full Marks – 80

Pass Marks – 32

Time – Three hours

The figures in the margin indicate full marks for the questions.

1. Choose the correct answers of the following :
1×6=6

(a) Operation research is the sophisticated name given to a

(i) situational problem-oriented approach

(ii) intuitive problem-oriented approach

(iii) multi-disciplinary problem-oriented approach

(iv) All of the above

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(b) A new technique of operation research used to solve certain problems by dividing the total problem into a number of subsidiary problems is called

(i) Simulation

(ii) Dynamic programming

(iii) Decision theory

(iv) Allocation model

(c) In a Linear Programming, the given resource constraints by which objective function is being achieved is called as

(i) Optimal function

(ii) Feasible function

(iii) Objective function

(iv) Subjective function

(d) An unbalanced assignment problem is converted into balanced one by adding dummy column or row, the value of cost of dummy column or row will be

(i) 0

(ii) 1

(iii) −1

(iv) Depends on the problem

(e) Which of the following is not a type of e-commerce ?

(a) Business to Business (B2B)

(b) Business to Consumer (B2C)

(c) Consumer to Market (C2M)

(d) Consumer to Consumer (C2C)

(f) Which of the following is not an Accounting software ?

(a) Quick Books   (b) Tally Prime

(c) Wave   (d) Ms Excel.

2. Answer the following questions :   2×5=10

(a) What is meant by Operation Research ?

(b) Define the term 'Linear Programming'.

(c) What do you mean by feasible region in LPP ?

(d) What is degeneracy and non-degeneracy solution ?

(e) Mention any two features of e-commerce.

3. Answer any *six* of the following questions :
5×6=30

(a) Briefly explain the various models applicable in operation research.

(b) Explain in brief, any five uses of Linear Programming.

(c) Distinguish between balance assignment problem and unbalance assignment problem with example.

(d) Briefly explain any five importance of application of computer in business.

(e) State the characteristics of Linear Programming.

(f) Briefly explain the various categories of e-commerce.

(g) Solve the following Linear Programming problem by graphical method :

Maximize $Z = 20x_1 + 50x_2$

Subject to, $2X_1 + 5X_2 \leq 40$

$3X_1 + 5X_2 \leq 60$

$3X_1 + 2X_2 \leq 80$

Where, $X_1, X_2 \geq 0$.

(h) Solve the following transportation problem by North-West Corner Rule to find out the minimum cost of transportation :

	D_1	D_2	D_3	D_4	Supply
S_1	60	40	50	40	150
S_2	30	90	30	70	160
S_3	40	30	60	30	50
S_4	55	25	40	20	140
Demand	100	150	100	150	

(i) Find the feasible solution of the following transportation problem by Least Cost Method :

	D_1	D_2	D_3	Supply
S_1	60	40	50	140
S_2	30	90	30	160
S_3	40	30	60	150
Demand	180	100	150	

4. Answer any *two* of the following questions : 10×2=20

(a) Discuss the significance of operation research techniques in relation to present era.

(b) Describe briefly the various steps necessary for formulating simplex algorithm.

(c) Discuss the scope of e-commerce in the present aspects of business.

5. Answer any *one* of the following questions : 14×1=14

(a) The captain of a cricket team has to allot five middle batting positions to five batsmen. The average runs scored by each batsman at these positions are as follows :

Batsman	Batting Positions				
	I	II	III	IV	V
Ajay	40	40	35	25	50
Bijay	42	30	16	25	27

	Batting Positions				
Batsman	I	II	III	IV	V
Chrish	50	48	40	60	50
Dinesh	20	19	20	18	25
Edward	58	60	59	55	53

Find the assignment of batsmen to such positions which would bring maximum number of runs for the team.

(b) Explain in brief, the various methodologies used in computer system development.