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RC-4451-52

M.B.A. (Sem. IV) (FT) &
M.B.A. (Sem. IV) (E) Examination

April / May – 2010

(OP & O-403) & (OP & O-601) : Transportation Management

Time : **3** Hours] [Total Marks : **100**

RC-4451

Instructions : (1)

નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fillup strictly the details of ☛ signs on your answer book.

Name of the Examination :

☛ **M.B.A. (Sem. 4) (FT) & M.B.A. (Sem. 4) (E)**

Name of the Subject :

☛ **(OP & O-403) & (OP & O-601) : Transportation Management**

☛ Subject Code No. : **4 4 5 1** ☛ Section No. (1, 2,.....) : **1**

Seat No. :

Student's Signature

(2) Question **1** and **4** are **compulsory** questions.

(3) Answers to the two sections must be written in **separate** answer books.

(4) Figures to the **right** indicate **full** marks.

1 Demands of transportation have extended from just managing transportation needs to managing transportation function effectively in all pertinent fields. Emerging trends, global dynamics and challenges are causing for transformation of transportation management to ensure efficient and responsive supply chains; improve readiness and responsiveness of emergency services; and raise the performance and security of public transportation. Justify the statement. **18**

2 Solve any **two** of the following : **16**

(a) The target year productions and relative attractiveness of the four zone city have been estimated as follows :

Zone	Productions	Attractiveness
1	1500	0
2	0	3
3	2600	2
4	0	5

The calibration of the gravity model for this city estimated by the parameter c to be 2.0 and all socioeconomic adjustment factors to be equal to unity. Apply the gravity model to estimate all target interchanges Q_{ij} and to estimate the total target year attractions of each zone given that the target year interzonal impedances W_{ij} will be shown in the following skim table :

	J	1	2	3	4
I					
1		5	10	15	20
2		10	5	10	15
3		15	10	5	10
4		20	15	10	5

(b) A driver of a car applied the brakes and barely avoided hitting an obstacle on the roadway. The vehicle left skid marks of 88 ft. Assuming that f = 0.6, determine whether the driver was in violation of the 45-mi/h speed limit at that location if she was travelling (a) uphill on a 3° incline, (b) downhill on a 2.3° incline, or (c) on a level roadway. Also, compute the average deceleration developed in each case.

(c) A company is maufacturing air coolers has two plants located at Bombay and Calcutta with a weekly capacity of 200 units and 100 units respectively. The company supplies air coolers to its 4 showrooms situated in Ranchi, Delhi, Lucknow and Kanpur, which have a demand of 75, 100, 100 and 30 units respectively. The cost per unit (in Rs.) is shown in the following table :

Plants	Ranchi	Delhi	Lucknow	Kanpur
Bombay	90	90	100	100
Calcutta	50	70	130	85

3 Write short notes on any **two** of the following : **16**

(a) Perception - Reaction
(b) Dilemma Zones
(c) Visual Activity
(d) Lateral Displacement.

RC-4452

Instructions : (1)

નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fillup strictly the details of ☛ signs on your answer book.

Name of the Examination :

☛ **M.B.A. (Sem. 4) (FT) & M.B.A. (Sem. 4) (E)**

Name of the Subject :

☛ **(OP & O-403) & (OP & O-601) : Transportation Management**

☛ Subject Code No. : **4 4 5 2** ☛ Section No. (1, 2,.....) : **2**

Seat No. :

Student's Signature

(2) Question **1** and **4** are **compulsory** questions.

(3) Answers to the two sections must be written in **separate** answer books.

(4) Figures to the **right** indicate **full** marks.

4 Case Study : **18**

You are a planning consultant to trading firm that is considering the construction of a major shopping center in the city of Trinity. At present city consists of three residential zones and the central business district (CBD), where all shopping activity is concentrated. Your clients can acquire land for the proposed center at the location shown and are interested in your prediction of the patronage that the center will attract if built to complete with the CBD. The following data have been made available to you :

(i) Daily shopping trip production (trips per person)

	X_2	0	1	2
X_1		0.2	0.3	0.4
≤ 2		0.1	0.2	0.3
3		0.1	0.2	0.3
≥ 4		$X_3 = 1$		

Where

X_1 = household size, in persons/household

X_2 = auto ownership, in cars/household

X_3 = household income level (I or II)

(ii) Relative shopping attractiveness : The relative shopping attractiveness of commercial zones has been found to be given by the following multiple regression equation :

$$\mathbf{A = 5X_a + 3X_b}$$

Where

X_a = area of shopping floor space provided, in acres

X_b = available parking area, in acres

(iii) Land use socio economic projections

Residential Zones					
				Number of households	
Zone	X_1	X_2	X_3	Base year	Target year
1	2	0	I	300	500
	2	1	I	300	400
	3	1	I	200	300
	2	2	II	0	50
2	2	1	I	400	500
	2	1	II	300	200
	3	2	I	200	300
	3	0	I	100	400
3	1	1	II	200	200
	2	2	II	300	400
	3	2	II	400	300
	4	2	II	200	400

(iv) Gravity model parameters :

(a) ln F = –ln W, where W is the interzonal impedance, in minutes

(b) K_{IJ}

	J	4(CBD)	5(center)
I			
1		1.0	0.9
2		0.9	1.2
3		1.0	1.0

You are asked to calculate all target year interchange volumes and the target year patronage of the two commercial data.

5 Write a short note on Architecture components and Standards of Intelligent Transport System (ITS) Interface. **16**

OR

5 Write a short note on Travel Demand Forecasting process. **16**

6 Write short notes on any **two** of the following : **16**

(a) Major Modes of transportation

(b) Vehicular Emission Norms

(c) Generation of Traffic Congestion

(d) Cross Classification Models