

GANPAT UNIVERSITY
B.TECH- SEMESTER-VIII CIVIL ENGINEERING
CBCS REGULAR EXAMINATION APRIL-JUNE- 2017

SUBJECT: 2CI: 811- TRANSPORTATION ENGINEERING –II

Time: 3 Hours

Max Marks: 70

Instructions: - (1) Answer to the two sections must be written in separate answer books.

(2) Figures to the right indicate full marks.

(3) Assume suitable data if required.

SECTION - I

Que 1

Answer the following questions.

- (A) Explain problem in the urban transportation in the present scenario of high vehicle ownership. (6)
- (B) Develop trip production equation and calculate all the relevant statistics to check the validity of the equation using the following data. (6)

Average Household Size	2	3	4	5	6
Average Total trips made per day	5	7	8	10	10

OR

Que1

Answer the following questions.

- (A) Obtain the future O-D matrix from the given data using (6)
- i. Uniform growth factor method.
 - ii. Average growth factor method

O / D	1	2	3	Ti
A	50	100	200	400
B	100	50	300	850
C	200	300	100	1100
Tj	400	850	1100	

- (B) Write short note on: (6)
1. All or nothing assignment method.
 2. Factor affecting route choice.

Que 2

Answer the following questions.

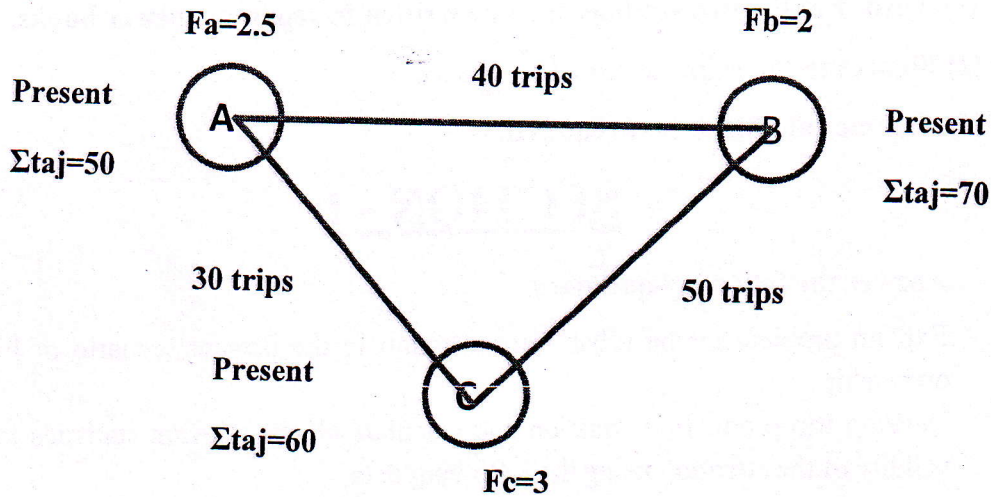
- (A) Enlist methods of trip distribution and explain comments of growth factor methods. (4)
- (B) What is transportation planning process? Draw flow chart and explain various steps. (7)

OR

Que 2

Answer the following questions.

- (A) Write short note on "Gravity Model". (4)
- (B) Three zones A, B, C are shown in figure with interchanges between A and B=40, (7)
 between B and C=50 and between C and A=30. These are non-directional interchanges. Growth factors of 2.5, 2 and 3 are forecasts for the zones A, B and C respectively. Using the fratar method computes the zonal interchanges in the forecast year.



Que 3

Answer the following questions.

- (A) Explain the sequential four stage travel demand modeling procedure with the (6)
 significance of each stage.
- (B) The design year total person trips distributed between four zones are shown in the (6)
 table below. The modal split analysis shows 80 / 60 for public transport vs Private car, as an overall split. The peak period car occupancy is 1.8 persons per car and 58 persons per car bus. Develop the trip matrices for the two modes and total vehicular trips.

O / D	A	B	C	D
A	-	1200	600	2000
B	400	-	800	500
C	1000	1500	-	1800
D	2200	300	400	-

SECTION – II

Que 4

Answer the following questions.

- (A) What are the benefits of ITS in urban environment? (6)
- (B) What do you mean by advanced traffic management system? Explain it in detail (6)

OR

Answer the following questions.

- (A) On January 1, 1985, Rs. 100 was deposited in a fund attracting 4% compound interest annually. Other Rs. 100 were to be deposited on each January 1 upto and including January 1, 1995. The purpose of the fund was to provide a series of uniform annual withdrawals which was intended to exhaust the fund. Under these circumstances, what would be the amount to be withdrawn during the period 2000-2005? (6)
- (B) Explain in detail the Challenges faced in ITS implementations. (6)

Que 5

Answer the following questions.

- (A) Explain the following: (5)
- 1) Present value of uniform series.
 - 2) Sinking fund factor.
 - 3) Capital recovery factor.
 - 4) Net present value.
- (B) The cost of a construction of 4 lane highway per kilometer is Rs. 500, 00,000. The length of the highway is 60 km to be developed by raising loan. What would be the annual payment of equal payment for 20 years for the repayment of the loan? Assume the interest rate is 15%. (6)

OR

Que 5

Answer the following questions.

- (A) What do you mean by advanced traffic information system? Explain it in detail (5)
- (B) Assuming interest at 4% compounded annually. A payment of how much now is acceptable in place a payment of Rs. 1500 for 18 years hence ? (6)

Que 6

Answer the following questions.

- (A) Explain the following: (6)
- 1) Transit station.
 - 2) Transit Network.
 - 3) Transit Demand.
 - 4) Headway.
- (B) How will you achieve the proper coordination in urban mass transportation system? (6)

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