



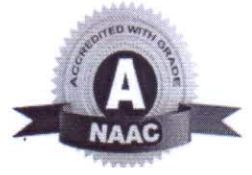
|| Jai Sri Gurudev ||  
Sri Adichunchanagiri Shikshana Trust ®

# SJB Institute of Technology

(A Constituent of BGS & SJB Group of Institutions and Hospitals)

BGS Health & Education City, Dr. Vishnuvardhan Road, Kengeri, Bengaluru-560060

Affiliated to Visvesvaraya Technological University, Belagavi. Approved by AICTE, New Delhi. Accredited by NAAC, New Delhi with 'A' Grade. Recognized by UGC, New Delhi with 2(f) and 12(B). Certified by ISO 9001-2015



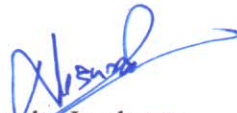
DEPARTMENT OF CIVIL ENGINEERING

## URBAN TRANSPORT PLANNING (18CV745)

### ASSIGNMENT-1

Q No	Question	CO mapped																											
1	Explain the 4-Stage transport planning model?	CO1																											
2	What are the impacts of transportation on environment?	CO1																											
3	Explain the various sources of noise generated from road vehicles causing pollution.	CO1																											
4	Explain the various stages involved in urban transport planning.	CO1																											
5	Describe how the study area is divided into Zones and mention the factors to be considered while dividing area into zones.	CO1																											
6	List the various methods available for data collection. Explain a) Home Interview Survey b) Registration Number Survey	CO1																											
7	Define sampling and explain the methods available for sampling.	CO1																											
8	State the important criteria for the evaluation of regression equation with relative assumption made in analysis of trip generation and discuss the limitations of multiple linear regression analysis and the suitability	CO2																											
9	<p>The following information was obtained from a transportation survey of a town:</p> <table border="1"><thead><tr><th>Traffic zone number</th><th>Population in the zone (in thousand)</th><th>Total trip generated (in hundreds)</th></tr></thead><tbody><tr><td>1</td><td>26</td><td>12</td></tr><tr><td>2</td><td>28</td><td>11</td></tr><tr><td>3</td><td>31</td><td>17</td></tr><tr><td>4</td><td>33</td><td>15</td></tr><tr><td>5</td><td>22</td><td>12</td></tr><tr><td>6</td><td>30</td><td>15</td></tr><tr><td>7</td><td>20</td><td>9</td></tr><tr><td>8</td><td>25</td><td>13</td></tr></tbody></table> <p>Develop a linear regression model for estimating the trips generated from a zone. If the population in a particular zone increases to 40,000 predict the expected trip generation from that zone.</p>	Traffic zone number	Population in the zone (in thousand)	Total trip generated (in hundreds)	1	26	12	2	28	11	3	31	17	4	33	15	5	22	12	6	30	15	7	20	9	8	25	13	CO2
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5	22	12																											
6	30	15																											
7	20	9																											
8	25	13																											
10	Explain the various factors governing the trip generation.	CO2																											

  
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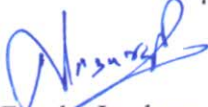
### URBAN TRANSPORT PLANNING (18CV745)

#### ASSIGNMENT-2

Q No	Question	CO mapped																																				
1	<p>The distribution of present trips among zone 1,2 and 3 are given in O-D matrix below. The future trips generated in zone 1,2 and 3 are expected to be 360, 1260 and 3120 respectively. Distribute the future trips among various zone using</p> <p>i) Uniform factor Method ii) Average growth factor method and draw the conclusion based on result.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>O/D</th> <th>1</th> <th>2</th> <th>3</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>60</td> <td>100</td> <td>200</td> </tr> <tr> <td>2</td> <td>100</td> <td>20</td> <td>300</td> </tr> <tr> <td>3</td> <td>200</td> <td>300</td> <td>20</td> </tr> </tbody> </table>	O/D	1	2	3	1	60	100	200	2	100	20	300	3	200	300	20	CO2																				
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3	200	300	20																																			
2	<p>The following table gives trip distribution between four zones 1, 2,3 and 4. Estimate the future interzonal trip between the four zones. (upto two iteration)</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>Future Trips</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>10</td> <td>20</td> <td>15</td> <td>18</td> <td>140</td> </tr> <tr> <td>2</td> <td>21</td> <td>16</td> <td>17</td> <td>14</td> <td>150</td> </tr> <tr> <td>3</td> <td>30</td> <td>21</td> <td>25</td> <td>27</td> <td>200</td> </tr> <tr> <td>4</td> <td>10</td> <td>9</td> <td>16</td> <td>13</td> <td>100</td> </tr> <tr> <td>Future Trips</td> <td>150</td> <td>120</td> <td>180</td> <td>160</td> <td></td> </tr> </tbody> </table>		1	2	3	4	Future Trips	1	10	20	15	18	140	2	21	16	17	14	150	3	30	21	25	27	200	4	10	9	16	13	100	Future Trips	150	120	180	160		CO2
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Future Trips	150	120	180	160																																		
3	<p>The total trips produced in and attracted to the three zones A, B, and C of a survey area in the design year are tabulated below</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Zone</th> <th>Trip Produced</th> <th>Trip Attracted</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>2000</td> <td>3500</td> </tr> <tr> <td>B</td> <td>3500</td> <td>4800</td> </tr> <tr> <td>C</td> <td>4800</td> <td>2000</td> </tr> </tbody> </table> <p>It is known that the trips between two zones are inversely proportional to the second power of the travel time between zones, which is equally 25 min. If the trip interchange between zones B and C is 300. Calculate the trip interchange between zones A-B, A-C, B-A and C-B</p>	Zone	Trip Produced	Trip Attracted	A	2000	3500	B	3500	4800	C	4800	2000	CO2																								
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4	<p>The calibrated utility function for travel in a medium city by automobile, bus and metro is given by <math>U = a - 0.002X_1 - 0.005X_2</math>; <math>X_1 = \text{Cost of travel(Rs)}</math>, <math>X_2 = \text{Travel time (min)}</math></p> <p>Calculate modal split for given values</p> <table border="1" data-bbox="542 282 1065 416"> <thead> <tr> <th>Mode</th> <th>a</th> <th><math>X_1</math></th> <th><math>X_2</math></th> </tr> </thead> <tbody> <tr> <td>Automobile</td> <td>-0.3</td> <td>120</td> <td>30</td> </tr> <tr> <td>Bus</td> <td>-0.35</td> <td>20</td> <td>45</td> </tr> <tr> <td>Metro</td> <td>-0.40</td> <td>60</td> <td>35</td> </tr> </tbody> </table> <p>Is a parking fee of 10/- per trip is imposed on automobile, what would be the split to the other two modes?</p>	Mode	a	$X_1$	$X_2$	Automobile	-0.3	120	30	Bus	-0.35	20	45	Metro	-0.40	60	35	CO3
Mode	a	$X_1$	$X_2$															
Automobile	-0.3	120	30															
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Metro	-0.40	60	35															
5	State traffic assignment and its applications? Explain its general principle.	CO3																
6	Explain the concept of Lowry derivative model with a flow diagram.	CO3																

  
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