

I. Basic concepts of Transportation Geography

- i. Definition, Growth and Scope of Transportation Geography
- ii. Theory of Transportation

II. Spatial Variations in Transportation Costs

- i. Location of Transportation Routes and Networks
- ii. The Structure of Transportation Costs
- iii. Transportation Costs and the Location of Economic Activity
- iv. Transportation Improvements and their Spatial Impact

III. Transportation Network Analysis (Study & application of the following)

BS Geography w.e.f. Academic Session 2018-2022 and onward

- i. Aggregate Measures
 - a. Graph Theoretic Concepts: Non-Ratio Measures, (cyclomatic Number, Diameter), Ratio Measures (Alpha, Beta, Gamma, Eta, Pi, Theta, Jota)
 - b. Measures of Individual Elements of Transportation Net-work: Associated Number, connectivity Dispersion, Accessibility, and circuitry
 - c. Measures of Nodal Accessibility
- i. Nodal Accessibility
- ii. The Shortest Path Matrix
- iii. Network as Valued Graph
- iv. Graph Theory Interpretation of Hierarchies

IV. Linkage Importance in a Regional Highway Network

V. Design and Performance of Network

- i. Costs and Benefits in Path Design
- ii. Traveling Salesman Problem
- iii. Other Minimum Distance Networks
- iv. The Best Path in a Network

VI. The Best Path on Irregular Surfaces

VII. Other Irregular Surfaces and Isochrones

VIII. Flow Analysis

- i. Concepts and Methods in Flow Analysis
- ii. Gravity Model
 - a. Basic Gravity Model
 - b. Gravity Model and Traffic
 - c. Gravity Model and Hinterland Analysis
 - d. Gravity Model and Potential Maps
 - e. Jilman's Triade
 - f. Weakness of the Gravity Model

IX. Model Systems

- i. Characteristics and Comparison of the following Model System
 - a. Rail Road
 - b. Motor Transport
 - c. Water Ways
 - d. Air Transport
 - e. Pipe Lines

X. Transportation Planning in Developing Countries

- i. The Need for Comprehensive Planning & Analysis
 - a. System Approach.
 - b. Comprehensive Planning
 - c. Pricing Policies
- ii. Transport-Alternatives Evaluation Model
 - a. Regional Consumption, Incomes, Prices
 - b. Aggregate Demand, Production and Growth
 - c. Input-Output Relationship
 - d. Investment and Capacity
 - e. Transportation Sector

Books Recommended:

1. Edward J. Taafee, (1996). Geography of Transportation, New Jersey, Prentice Hall.
2. Michael E. Eliot H. (ed.) (1974) Transportation Geography, New York, McGraw Hill.
3. Ronald, (1971) Gould, Spatial Organization, New Jersey, Prentice Hall.
4. Cole & King, (1968) Quantitative Geography, London, John Wiley & Sons.
5. Haggett, P. A.D. (1965) Locational Analysis in Human Geography, London, Edward Arnold.
6. Haggett P. & J. Chorley, Network Analysis in Geography, London, Edward Arnold.
7. Kansky, K.J., Structure of Transportation Networks.
8. Peter E. Lloyd P. D. Location in Space.