

Roll No: -----



## UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, December 2017

**Program: Master of Planning**

**Subject (Course): Transport Modelling and Planning (TMP)**

**Course Code: MPLE 822**

**No. of page/s: 03 excluding cover**

**Note: Laptops and Mobile Phones are not allowed.**

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**Semester – III**

**Max. Marks : 100**

**Duration : 3 Hrs**

### Section – A – Short Answer Type Questions (Word Limit – 60)

All questions are compulsory.

(4 Questions x 5 Marks) = 20 Marks

- Q1. “The Microeconomic and Macroeconomic Demand in Transport plays an important Role in Planning and Modelling of a Transport System.” Explain with examples for each.
- Q2. What is an Integrated and Efficient Public Transport System? List twelve (12) no of cities with organized, efficient, integrated and well performed public transport systems.
- Q3. Explain about the National Urban Transport Policy (NUTP) 2006. Give brief about five (5) key components focused in the policy.
- Q4. Define the term ‘Activity based Travel Analysis’. Support your answer with Two (2) Examples.

**Section – B – Medium Answer Type Questions (Word Limit – 200)**

Answer any Five (5) questions.

(5 Questions x 8 Marks) = 40 Marks

- Q1. Explain the terms of Network, Wards, Nodes, Links, Traffic Analysis Zones (TAZ), Outer Cordon, Inner cordon, Origin and Destination. Support your answer with graphs/sketches.
- Q2. Define and discuss the concept of Generalized Cost in Public Transport. A shopper decides to make a night-time visit to the 24-hour supermarket, which is 8 km away. His car uses petrol such that the cost of the petrol is Rs 8/km. The journey takes 22 minutes, and the shopper has a value of time of Rs 3500/hour. Calculate the generalised cost of the visit of shopper?
- Q3. Explain in detail about the Factors/Parameters affecting the demand for Transportation. How are the factors correlated in the context?
- Q4. Explain in detail about the Value Function of Time and Cost in Transport Modelling. How are they correlated in Trip Generation process? Support your answer with Examples.
- Q5. Define the terms of Routes, Corridors, Trips, Per Capita Trip Rate (PCTR), Modes, Passengers Per Hour Per Direction (PPHPD) and Trip Length. Support your answer with graphs/sketches.
- Q6. Define the Term Modal Split or Mode Choice. What is the role of it while planning a Public Transport System? What are the categories of factors which influence the mode choice decisions?

**Section – C – Long Answer Type Questions (Word Limit – 500)**

Answer all questions..

(2 Questions x 20 Marks) = 40 Marks

- Q1. Explain in detail about the Four Stage Transport Modelling. Write the process of Four Stage Transport Modelling. What are the advantages, disadvantages and limitations of this type of Modelling? Support your answer with graphs/sketches/diagram.
- Q2. “In Land Use Transport Models (LUTM) are the modelled product of continuous Urban Change Processes, interactions and relationship. The Land Use Transportation Interaction includes a process and interaction of Types of Land use, Change in Land use, Change in Trips, Change in Travel Needs, Change in Transport Supply, Accessibility and Land Values.” Comment, explain and review in detail citing examples. Support your answer with graphs/sketches/diagram.

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**Semester – III**

**Max. Marks : 100**

**Duration : 3 Hrs**

### Section – A – Short Answer Type Questions (Word Limit – 60)

All questions are compulsory.

(4 Questions x 5 Marks) = 20 Marks

- Q1. What do you understand by the Demand Modelling in Transport Sector? Explain the concept of Demand-Supply Equilibrium.
  
- Q2. What do you understand by the Role and Application of GIS in Land use and Transport Planning? Discuss any two GIS based transport models.
  
- Q3. Define the term 'Activity based Travel Analysis'. Support your answer with Two (2) Examples.
  
- Q4. What is an Integrated and Efficient Public Transport System? List twelve (12) no of cities with organized, efficient, integrated and well performed public transport systems.

**Section – B – Medium Answer Type Questions (Word Limit – 200)**

Answer any Five (5) questions.

(5 Questions x 8 Marks) = 40 Marks

- Q1. Explain in detail about the Value Function of Time and Cost in Transport Modelling. How are they correlated in Trip Generation process? Support your answer with Examples.
- Q2. Define the Term Modal Split or Mode Choice. What is the role of it while planning a Public Transport System? What are the categories of factors which influence the mode choice decisions?
- Q3. Explain the terms of Network, Wards, Nodes, Links, Traffic Analysis Zones (TAZ), Outer Cordon, Inner cordon, Origin and Destination. Support your answer with graphs/sketches.
- Q4. Define the terms of Routes, Corridors, Trips, Per Capita Trip Rate (PCTR), Modes, Passengers Per Hour Per Direction (PPHPD) and Trip Length. Support your answer with graphs/sketches.
- Q5. Define and discuss the concept of Generalized Cost in Public Transport. A shopper decides to make a night-time visit to the 24-hour supermarket, which is 8 km away. His car uses petrol such that the cost of the petrol is Rs 8/km. The journey takes 22 minutes, and the shopper has a value of time of Rs 3500/hour. Calculate the Generalized Cost of the visit of shopper?
- Q6. Explain and discuss the Four Stage Transport Modelling. Write the process of Four Stage Transport Modelling. What are the advantages, disadvantages and limitations of this type of Modelling? Support your answer with graphs/sketches/diagram.

**Section – C – Long Answer Type Questions (Word Limit – 500)**

Answer all questions. (2 Questions x 20 Marks) = 40 Marks

- Q1. “In Land Use Transport Models (LUTM) are the modelled product of continuous Urban Change Processes, interactions and relationship. The Land Use Transportation Interaction includes a process and interaction of Types of Land use, Change in Land use, Change in Trips, Change in Travel Needs, and Change in Transport Supply, Accessibility and Land Values.” Comment, explain and review in detail citing examples. Support your answer with graphs/sketches/diagram.
- Q2. “Revealed Preference (RP) and Stated Preference (SP) are key components of effective and satisfactory demand and supply analysis of a transport infrastructure.” Comment, define and discuss the statement within the context. Compare the RP and SP information, alternatives, attributes and choices. Discuss the application areas of both. Support your answer with examples/graphs/sketches/diagram.