

Name:  
Enrolment No:



**UNIVERSITY OF PETROLEUM AND ENERGY STUDIES**  
**End Semester Examination, December 2018**

**Course: Transport Modelling and Planning**  
**Programme: Master in Planning**  
**Time: 03 hrs.**  
**Instructions:**

**Semester: III**  
**Course Code: MPLE 822**  
**Max. Marks: 100**

**SECTION A**

S. No.	All Questions are compulsory	Marks	CO
Q 1	What do you understand by the Demand Modelling in Transport Sector? Explain the concept of Demand-Supply Equilibrium.	4	
Q 2	What is an Integrated and Efficient Public Transport System? Discuss about the basic components of an integrated and efficient public transport system.	4	
Q 3	Define the term 'Activity based Travel Analysis'. Support your answer with Two (2) Examples.	4	
Q 4	Explain the terms of Network, Nodes, Traffic Analysis Zones (TAZ), Origin and Destination. Support your answer with graphs/sketches.	4	
Q 5	What do you understand by National Urban Transport Policy (NUTP)? Explain the major objectives of the policy. Support your answer with graphs/sketches.	4	

**SECTION B**

	All Questions are compulsory		
Q 6	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 14 km away. His car uses petrol such that the cost of the petrol is Rs 18/km. The journey takes 38 minutes, and the shopper has a value of time of Rs 2800/hour. Calculate the Generalized Cost of the visit of shopper?	10	
Q 7	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.	10	
Q 8	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?	10	

	<p>OR</p> <p>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.</p>		
Q 9	<p>A City Traffic and Transportation Plan is needs to be prepared for a City with core population of 13.35 lakhs, a floating population of 1.25 lakhs and adjacent area population of 3.75 lakhs. The length of major road network in city is 175 km. No of NMT modes are 65000. As part of the study, following primary surveys are required, Household surveys (1%), Speed and delay (35%), NMT survey (7%). Please calculate the survey cost to be incurred for survey agency with and without contingency of 3%. Given: Household survey cost per household sample – Rs 375, Speed and delay cost per km – Rs 465, NMT survey cost per km – Rs 375.</p>	<b>10</b>	
<b>SECTION-C</b>			
	All questions are compulsory		
Q 10	<p>“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.</p> <p>OR</p> <p>“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.</p>	<b>20</b>	
Q 11	<p>“A CMP presents a long-term vision of desirable mobility patterns (people and goods) for a city and provides strategy and policy measures to achieve the vision. It should follow the NUTP objectives, which emphasizes the importance of pedestrian facilities, non-motorized transport measures, and public transport systems, including buses and sustainable mass rapid transit systems.” Comment and review the statement. Discuss in brief the components of a CMP document. Support your answer with graphs/sketches/diagram.</p>	<b>20</b>	