

Urban Transportation Systems Planning

Live interactive session – Week 1

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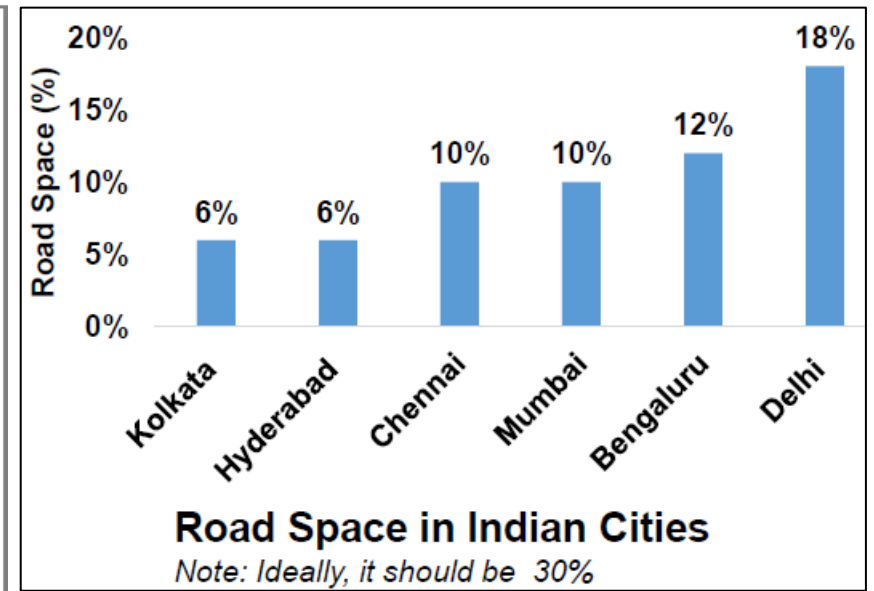
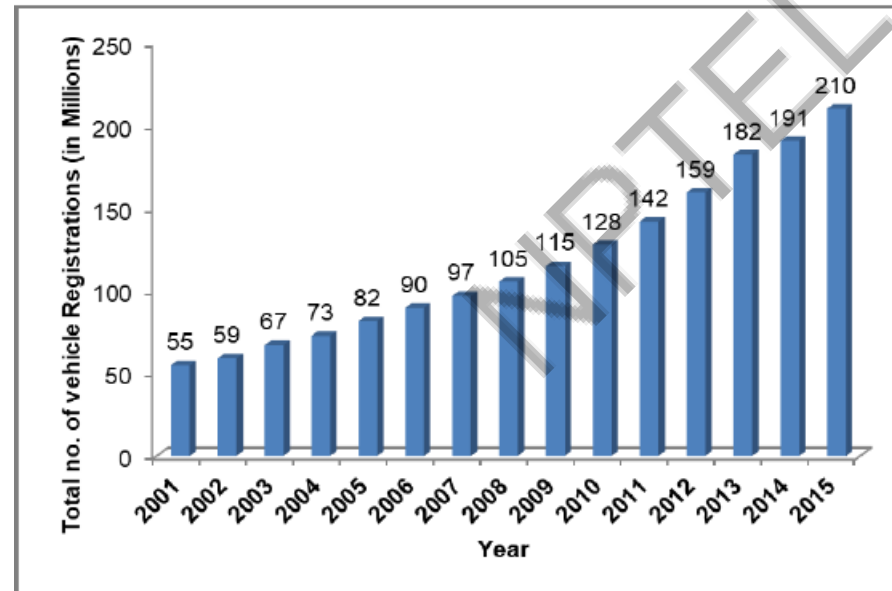
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Question 1

Limited road space in Indian cities has resulted in heavy imbalance in transportation demand and supply

a. Accept

b. Reject



Question 2

Inland water transport systems are very much under-utilized due to high carbon footprint

a. Accept

b. Reject

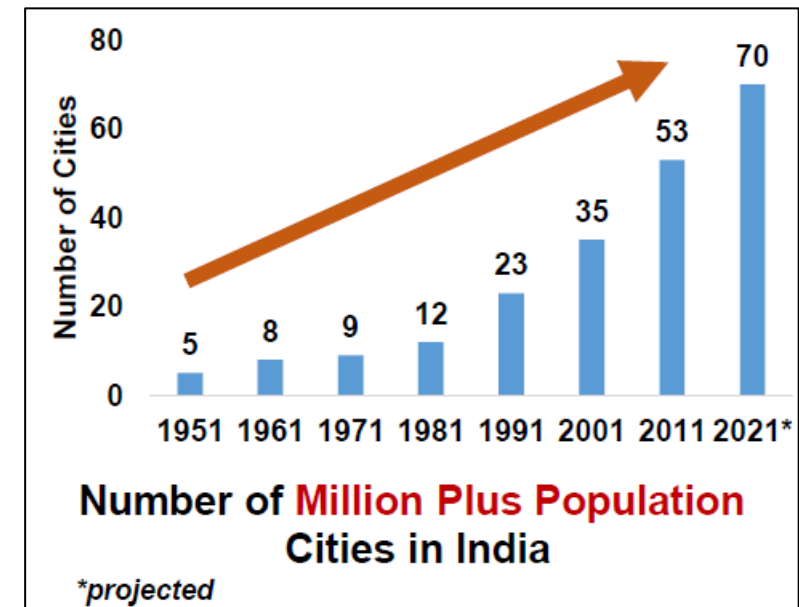
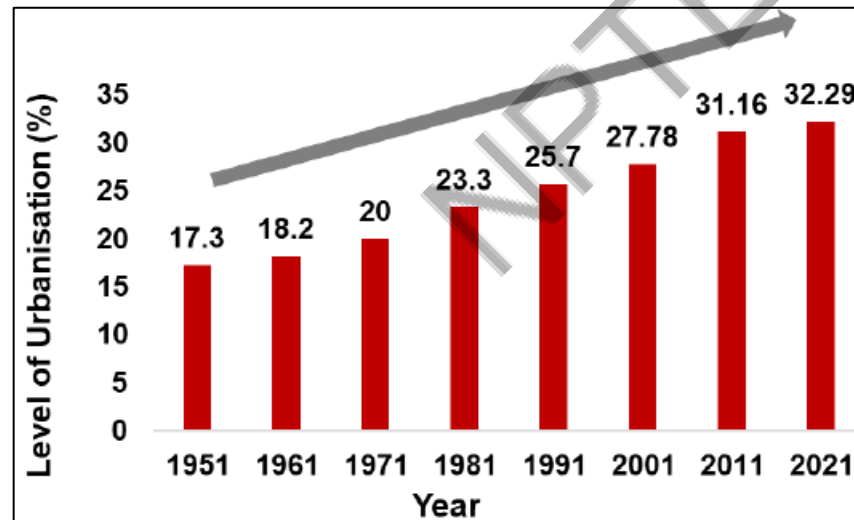
Inland water transport – Cheapest mode and also has a low carbon footprint

Question 3

The number of urban agglomerations is increasing due to migration of people from rural areas to urban areas

a. Accept

b. Reject



Question 4

Travel behaviour of an individual is not affected by online delivery services

a. Accept

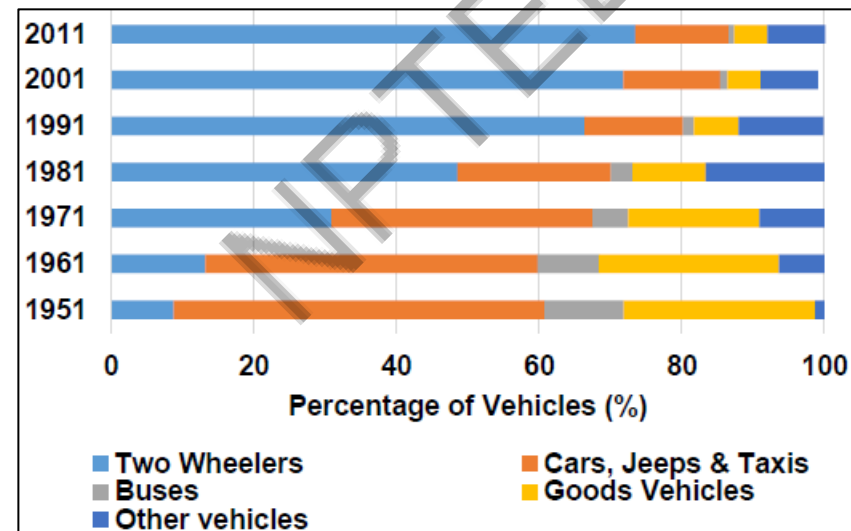
b. Reject

Travel behaviour – Decisions made related to trip-making

- Which mode to use?
- When to leave?
- Which route to take?

Question 5

Due to its' less attractiveness, the share of trips by public modes of transport is decreasing. (Note: Word count = 1)



Question 6

Road-based transportation is predominant in most Indian cities. (Note: Word count = 1)

NPTEL

Question 7

Rapid growth and urbanization of large cities may lead to

a. Sudden decrease in travel demand

- Increased urbanization induces more travel needs and thus increases demand

b. Heavy imbalance in transport supply and demand

- Limited road capacity unable to cater to the rapidly increasing demand

c. Lag in supply of transport infrastructure and services

- Transport infrastructures are capital intensive and also have physical constraints

d. Decrease in vehicular emissions

- Increased demand → Increased congestion levels → Increased travel times → Increased emissions

Question 8

Transportation demand:

- a. is influenced by availability of transport options
 - More options makes reaching places more accessible
- b. varies as per time of day, week day, or seasonally
 - Transport demand has a varying temporal characteristic
- c. may not vary depending on different land-use
 - Transport demand has a varying spatial characteristic
- d. exists as people want to fulfil some other purpose rather than just travel
 - Transportation demand is a derived demand

Question 9

Which of the following have a negative impact on transport systems?

a. Long-distance work trips by private modes

- More congestion, more fuel consumption, more emissions, reduced parking availability, increased accidents

b. Increased use of private vehicles

c. Use of GPS/intelligent technologies for public transport systems

- Provide live bus location, provide ETA, bus priority

d. Use of non-motorized transport modes for short-distance trips

- Reduced congestion, reduced fuel usage, ...

Question 10

Which of the following options are correct with respect to demand management strategies?

- a. Policy oriented
- b. Not capital intensive
- c. Physically constrained
- d. Signal coordination is one of the demand management strategy

Question 11

Which of the following statements are true with respect to problem definition?

- a. Problem definition defines the interface between the system and its environment
- b. A standard represents a condition that is capable of both measurement and attainment
- c. Basic system inputs are the demands for the movement of person and goods between urban activity centres
- d. Travel times, travel cost, accident rates, delay, etc. can be termed as system outputs

Question 12

- Match the points in Column A with the statements in Column B in the context of system objectives

a. 1-C, 2-F, 3-B

b. 1-C, 2-D, 3-A

c. 1-B, 2-A, 3-E

d. 1-B, 2-F, 3-E

Column A	Column B
1. Goal	A. More than 90% of public transport operation to be as per the published time schedule B. Ensuring reliable and efficient public transport modes
2. Objective	C. Ensure public transport is accessible to all socio-economic groups D. Minimize travel cost by public transport
3. Standard	E. The travel time of public transport not to exceed more than 15% of the travel time of private transport F. Minimization of travel time

Question 13

Which of the following statements are true?

a. Value function is instrumental in transferring magnitudes of output variables into the relevant system objective

- Different outputs have different units of measurement. Value function brings them to a common unit making them comparable

b. A goal may be conceived as a lower order goal which at least conceptually is capable of being measured

- Goal is a broader statement about the purpose of the work

c. Legal constraints do not limit the extent of feasible solution

d. Decision criterion refers to a rule that drives the system planner for identifying the optimal system

- Identifying a criterion is an important task in the problem definition stage, that help to pick the “best” alternative

Question 14

Which of the following statements are true?

- a. Input variable magnitudes are required for evaluation and choice of the alternative systems
 - Input magnitudes for solution generation, output magnitudes for evaluation
- b. The planner must predict the magnitudes of the output variables of each of the alternative systems generated
 - Different alternatives can be evaluated through comparison of the output variables
- c. The alternative system that satisfies the objectives to the greatest extent is implemented throughout the planning period
 - Optimal solution is the one satisfying the objective to the greatest extent
- d. Spatial and temporal patterns of travel demand may be neglected while estimating future travel demand
 - Necessary to consider the spatio-temporal variations for designing efficient solutions

Question 15

Which of the following statements are true?

- a. Transportation planning attempts to predict and evaluate some future year equilibrium condition
 - A crucial input to the planning process
- b. Transportation planning helps in assessing the impacts of implementing alternative courses
 - Evaluation and Choice step of the Systems Engineering Process
- c. Transportation systems planning leads to decisions on transportation policies and programs
 - Policies and strategies are recommended based on the chosen alternative solution
- d. None of the above