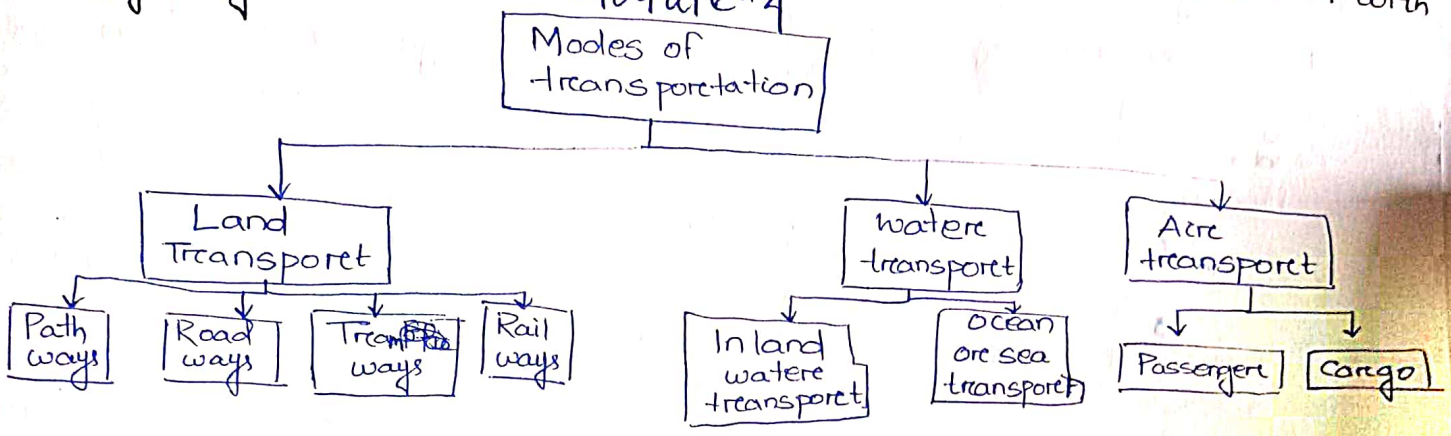
Module - IV

Transport, traffic and Urban Engineering

Q) What are the different modes of transportation indicate it with tray diagram.

Module-4



Q) What do u mean by Planning and design aspects of transportation Enginnering?

→ The planning aspects of transportation engineering relate to elements of urban planning and involve technical forecasting decisions and political factors. Technical forecasting of passenger travel usually involves an urban transportation planning model, requiring the estimation of trip generation (how many trips for what purpose), trip distribution (destination choice, where is the traveler going), mode choice (What mode is being taken) and route assignment (Which streets or routes are being used).

→ Passenger trips are the focous of transportation engineering because they often represent the peak of demand on any transportation system.

→ Before any planning occurs the Engineer must take what is known as an inventory of the area or if it is appropriate, the previous system in place. This inventory or data base must include information on (i) Population (ii) land use (iii) economic activity (iv) transportation facilities and services. (v) travel pattern and volume.

These information help the engineer to complete forecasts of the future conditions of the system review.

Transport Design

Design might relate to :-

(i) The physical ~~rectation~~ expansion of transport facilities, such as lane width or the number of lanes, for a roadway.

(ii) The material and thickness used in pavements.

(iii) consideration of cost pricing and safety criteria.

Q) Write a short note on (a) Highway Engineering
(b) Railway Engineering
(c) Airport Engineering

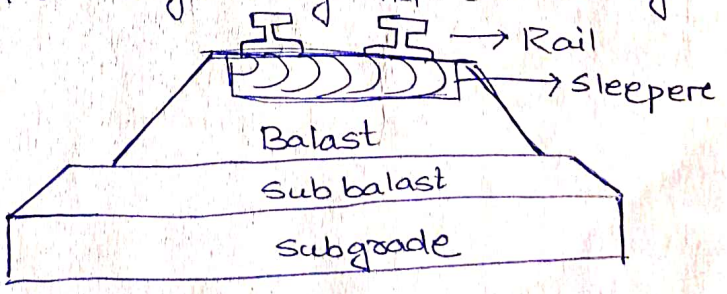
Highway engineering

Highway engineering is an engineering discipline branching from civil engineering that involves the planning, design, construction, operation and maintenance of roads, bridges and tunnels to ensure safe and effective transportation of people and goods.

- Highway engineerings must taken into account future traffic flows, ~~design of highway~~ geometric alignment and design, highway pavement materials and design, structural design of pavement thickness and pavement maintenance.
- The most appropriate location, alignment and shape of a highway are selected during the design stage.
- Highway engineers design road geometry to ensure stability of vehicles when negotiating curves and grades and to provide adequate sight distance for undertaking passing maneuvers along curves on two lane, two way roads.

Railway Engineering

- It is the branch of civil engineering concerned with the design construction, maintenance and operation of railways.
- Railway engineering includes elements of civil, mechanical, industrial and electrical engineering.
- Railway engineers handle the design, construction and operation of railroads and mass transit systems that use a fixed guideway.
- Typical tasks would include determining horizontal and vertical alignment design, station location and design, Construction cost estimating and establishment of signalling and controlling system.



(components of railway track)