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Paper = HIGHWAY & TRAFFIC ENGINEERING

Pg #1

QNO: I Keep in view different modes of transportation
Compare railways with Highways.

Ans: Modes of transportation

There are different modes of transportation.

A human being has always remained surrounded by three basic medium known as land, water, air.

The modes of transportation are also connected to these three medium. The land used for the development of road and rail transport while water and air have developed water ways and air ways respectively. Thus there are four different modes of transportation.

- ① Railways
- ② Road ways
- ③ Water ways
- ④ Air ways

Highway

- ① These are the primary and early modes of communication on the land.
- ② They are used for long as well as short distance.

Railway

- ① The steel rail are laid along the route.
- ② They are used for more suitable for long distance.

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Highways

- ③ they are most suitable for light loads and small vehicles
- ④ they link up the trade centers and their communication such as railway, sea way and airway

Railways

- ③ they are transport heavy and bulky loads
- ④ they are supposed to be the safe, comfortable and cheapest ways of transportation

QNo. 2

STEP for design Highway

Ans. ① collect basic data :

the basic data that we need to topographic map of the area that we build roads.

② IDENTIFICATION location of roads :

we identify the class of road that we will create from the starting points to end point of road construction plan.

③ Determine road criteria :

we need to classified our road based on the road function vehicles plan. VCHR and ~~VJR~~ VJR and our design speed

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(4) Determine optimal road alignments:

We can determine over road alignment base on basic data. Alignments have few types such as horizontal and vertical alignments.

The main product used in the construction of a highway pavement are aggregates asphalt concrete and other hydraulic base material and small element blocks, slab and bricks.

Traffic volume when the road open

Traffic volume at the end of the project life

Ques What is the importance of vehicle performance in highway design:

Ans in sight into highway design and traffic operation to be able to accommodate a large variety of vehicles. The basic to understanding vehicle design and their impact on performance of road vehicles forms the basic for road ways design guide lines such as

- ① length of acceleration / deceleration lanes
- ② maximum grades

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- (3) Stopping - sight distance
- (4) passing - sight distance
- (5) setting speed limits
- (6) timing of signalized intersection

Q.No. 4 write short note on directional distribution in design of highways.

Ans: the directional distribution is defined as the percentage of ~~heavy~~ heavier volume over the total high way volume.

Accounts for the directional distribution of traffic used to convert average daily traffic to directional peak hour traffic.

e.g: Consider a road if during the design hour the directional distribution is equally split of 2000 vph is one direction, two lanes in each direction may be adequate adequate. If 80 percent of DHV is in one direction at least three lanes in each direction would be needed for the 3200 vph

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Qns: 5. Explain broad classification of surface distress modes

Ans: 1)

there are three classification in surface distress mode

- (1) Fracture
- (2) Distortion
- (3) Disintegration

(1) Fracture

they could be in form of cracking in flexible and rigid pavements.

(2) Distortion

this is the form of deformation. (rutting, corrugation and shoving)

(3) Disintegration.

this is the form of stripping, raveling or spalling.

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Q No: 6 :: Explain Alligator cracking, block cracking longitudinal crack and transverse cracking

Ans: Alligator cracking

Alligator cracking refers to a surface damaged in such a way that the cracks form a pattern that looks like reptiles, most notably those on alligator and crocodile's back. The pattern usually begins with longitudinal cracks which are then connected by transverse cracks.

(2) Block cracking

Block cracking is a series of large (typically one foot or more rectangular) cracks on an asphalt pavement surface. This type of cracking typically covers large areas and may occur in areas where there is no traffic. Block cracking is typically caused by shrinkage of the

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asphalt pavement due to temperature

(3) Longitudinal Cracking:

Longitudinal cracking occur parallel to the centerline of the pavements. They can be cause by a poorly constructed joint shrinkage of the asphalt layer cracks reflecting up from an underlying layer and longitudinal segregation due to improper paver operation.

(4) TRANSVERSE CRACKING

Transverse cracking is an unconnected crack that runs across a road pavement, perpendicular to the direction of road.