Pg No 01:-

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| To | 7837 |
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| Section | B |
| Semister | 06 |
| Submitted to | Sir Nadeem |
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## Question No 01:-

→ **Highway:-**

1:- The load carrying capacity of highway is less as compare to railway.

2:- The frequency of accident is more.

3:- The maintance cost is less.

4:- Door to Door service is avaible.

5:- Highways are suitable for any distance.

→ **Railway:-**

1:- Railway carrying capacity is more as compare to highway.

2:- The frequency of accidents is less

3:- Door to Door Service is not avaible

4:- It is suitable for long distances

5:- The maintance cost is more.

# Question No 02:-

## Answer :-

### → Data Examination :-

The first Phase in any highway Location study is the examination of all available data of the area in which the road is to be constructed.

### → Data Source :-

(National/Provisional department, transportation, agriculture, geology, hydrology and Mining)

- Existing engineering report
- Maps
- Aerial Photograph
- Charts

The type and amount of data collated and examined depend on the type of highway being considered.

### → Area characteristic Covered in Data :-

Engineering include topograph geology, climate and traffic Volume.

- Social and demographic, including land use and zoning Pattern.

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- Environmental include, type of wild life, location of recreational, historic and archeological sites and the Possible effects of air, noise and water Pollution.

## → Peeliminary analysis of the Data :-

Will indicate whether any of the speeific sites should be calculted from further consideration because of one or more of the above characteristics.

For example :- It is fand that a site of historic and archeological impoitance is located with an area being considered for Possible reuter location may be immediatly decided that any route that traverse that site should be excluded from further consideration.

## Question No 03:-

# Importance Of Vehicle Peyormance In highway design :-

Importance of vehicle Peyormance in highway design are.

1:- Static
2:- Dynamic
3:- Kinematic

### 1:- Static:-

The weight and size of vehicle is important in determine. The Physical component of highway such as.

1— lane width
2- shoulder width
3- length and width of Parking bays
4- length of vertical curve
5- Pavement depth

## → Dynamics:-

Force that act on vehical while it is an motion

1- Air Resistance
2- Grade Resistance
3- Rolling Resistance
4- Curve Resistance

## → Kinematic Importance:-

Primary element is the acceleration and deacceleration capability of vehicle.

Acceleration is importance in operation of Passing and gap acceptance.

Involve the study how acceleration rate influence the element of motion such as velocity distance and time.

## Question No 04:-

### → Directional Distributin:-

Directional distribution is simply the distribution or split of the total traffic volume in two opposite direction of traffic flow.

Highway must be design to adequate Serve the Peak hour traffic volume in Peak direction of flow.

Two line road design for total hourly traffic in both direction

In the design of highway with more than two line where importance intersection are encountered or where additional lines are to be Provided. Latter.

Directional traffic is used for Multilane road or streats.

Mostly one direction contributes by 55-70% in total traffic although occansionally 80% observed.

## Question No 05:-

Surface distress can be classified broadly into the flowing three groups.

### 1:- Fraction:-

This could be in the form of cracking or breaking, generally due to excessive loading, fatigue, thermal changes.

### 2:- Distortion:-

This is in the form of deformation, which can result from such things as excessive loading, densification

### 3:- Disintegration:-

This is in the form of shipping or raveling or removal of Paving materials, which can result from such things as loss of bonding, chemical reactivity, traffic abrasion, aggregate degradation or binder aging.

# Question No 06:-

## → Alligator Cracking:-

Alligator cracking may be considered a combination of fatigue and block cracking.

It is the series of interconnected crack of various stages of development.

Alligator cracking develops into a many sided Pattern that resembles chicken wire or alligator skin occurs in area subjected to repeated traffic loading.

## → Block Cracking:-

A Paten of cracks that divides the Pavement into approximately rectangular Pieces, with sides generally longer than one feet. Rectangular blocks range in size from approximately $0.1 m^2$ to $10 m^2$. Possible causes can be shrinkage of asphalt.

## → Longitudinal Cracking :-

Longitudinal cracking are Predominantly Parallel to Pavement centerline location within the lane (wheel Path verses non-wheel Path) is significant.

Possible causes are expansion and contraction of Pavement material, roadbed Settlement, Poorly constructed Paving joint

## → Transverse Cracking :-

Cracking across the centerline, not due to reflection cracking.

Transverse cracking occurs roughly Perpendicular to the centerline of the Pavement.

They can be caused by shrinkage of the asphalt layer.

Possible causes : Expansion and contraction of Pavement material, roadbed Settlement, Poorly constructed Paving Joints.