

7(b). Explain the diamond interchange with neat sketch.

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A diamond interchange is a common type of highway interchange that allows for the crossing of two roads at different levels. It is named for its diamond-shaped configuration when viewed from above. Here's an explanation of a diamond interchange along with a neat sketch:

Sketch Description:

The sketch represents a bird's-eye view of a diamond interchange. It consists of two main roads, referred to as "Main Road" and "Cross Road," crossing over each other. The interchange includes entrance and exit ramps, as well as various lanes and markings.

Explanation:

1. Main Road: The Main Road runs horizontally across the sketch. It represents a major highway or arterial road that carries through traffic.
2. Cross Road: The Cross Road intersects the Main Road vertically. It represents a secondary road or local road that crosses over the Main Road.
3. Overpass: The Cross Road passes over the Main Road using a bridge or overpass, which allows for the separation of intersecting traffic streams.
4. Entrance Ramps: On the right side of the sketch, you'll see two curved ramps connecting the Cross Road to the Main Road. These ramps provide

access for vehicles entering the Main Road from the Cross Road.

5. Exit Ramps: On the left side of the sketch, you'll see two curved ramps connecting the Main Road to the Cross Road. These ramps allow vehicles on the Main Road to exit onto the Cross Road.

6. Interchange Area: The area where the ramps connect to the Main Road and Cross Road is known as the interchange area. This is where vehicles transition between the highway and the local road.

7. Traffic Lanes: The Main Road and the Cross Road are divided into multiple lanes to accommodate traffic flow. Arrows indicating the direction of traffic are included to denote the flow of vehicles.

8. Medians: The sketch shows medians along both the Main Road and the Cross Road. Medians help separate opposing traffic and provide a safe refuge for pedestrians.

9. Road Markings: The sketch includes road markings such as lane dividers, stop lines, and crosswalks to regulate traffic and guide drivers.

The diamond interchange design facilitates the movement of vehicles between the Main Road and the Cross Road while minimizing conflict points. It allows for free-flowing traffic on the Main Road while providing controlled access to and from the Cross Road through the ramps. This type of interchange is often used in areas with moderate traffic volumes and limited space for larger interchange designs.