13. Explain Characteristics of Traffic Incidents.
14. Describe Incident management process.
15. Discuss National importance of survival of Transportation systems during and after all natural disasters and manmade disasters

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Characteristics of Traffic Incident -

→ Static Characteristics -

1) Design of the vehicle
2) Weight of the vehicle
3) Breaking system of vehicle.
4) Behaviour and Concentration of the driver
5) Collision due to neglection of the other vehicles.

→ Dynamic characterics -

1) Speed of the vehicle
2) Overtaking speed
3) Design of the road.

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Unit – 5 Incident Mgmt

- Traffic Incident Management is the response to traffic accidents, incidents and other unplanned events that occur on the road network, often in potentially dangerous situations.
- Incident management requires
    - planning,
    - response,
    - safety at the scene of the incident and
    - recovery.
- It requires attention to three main aspects – in order of priority – safety, mobility of traffic flow and control and repair of damage.

Types of incidents

- breakdown of vehicles
- incidents with only material damage
- those involving injured persons, death, fire, and dangerous goods; and
- investigation of guilt or crime .

Impacts

- delay,
- property damage,
- injuries and fatalities, and
- road safety for the road users

Process

Common phases of an incident are:

- **detection** - that an incident has occurred
- **verification** - that the incident has occurred, determining its location and having sufficient information to enable an appropriate response
- **response** - by dispatching appropriate services to resolve the incident
- **clearance**, or the removal of the vehicles, damaged property and victims from the incident scene, and complete reopening of any blocked lanes
- **recovery** to normal traffic flow

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impact of the threats and risk level of disasters on transportation systems:

- **Increased mobility -** mobility of passengers (for commuting, tourism, business and migration) and freight has increased notably around the world.
- **Infrastructure and economic interdependency**. Infrastructures are increasingly interdependent, particularly transportation and energy infrastructures, so a disruption in one will have an effect on others.

- **Centralization and concentration of distribution**. The principle of economies of scale often leads to a centralization of network structures and a concentration of economic activities.
- **Urbanization**. The emergence of large cities has led to acute concentrations of populations, a pattern significantly different than the more dispersed settlements that prevailed in rural societies.

- With the increasing reliance on distribution systems, any failure of transportation, due to intentional or non-intentional causes, can have very disruptive consequences and can compromise national security.

Natural disasters

- **Extreme weather events**. Many weather events such as storms and blizzards occur regularly and tend to have minimal impacts on transport systems with delays, partial closures or diversions.
- The 2011 Tohoku earthquake in Japan is among the five largest in recorder history. While the damage by the earthquake was significant, it is the associated tsunamis that caused the most extensive damage to Japanese transport infrastructure. Further, the earthquake had significant impacts on global supply chains as the Japanese automobile production fell by 50% in the following months, mostly because of disruptions in supply chains.

- **Sea level rise** - many cities and infrastructure are built right above the upper tidal limit. evidence underlines a rise by one meter by 2100 is certain. If the sea level rise accelerates, the one meter scenario could even be reached by 2050. sea level rise places critical transport infrastructure such as ports and airports at risk of damage and discontinuity in operations. For instance, a port terminal or an airport could not be directly impaired by sea level rise, but its access roads could be, compromising its commercial viability.

Man-made disasters

- **Accidents**. The outcome of technical failures or human errors and where modes, infrastructure or terminals can be damaged, even destroyed, which includes injuries, the loss of life and property damage.

- **Infrastructure failure**. Transportation infrastructure can fail due to a lack of (or deferred) maintenance, improper management, design flaws or handling more traffic than they are designed for. Bridges and other similar structures are particularly vulnerable.
- **Conflicts, terrorism and piracy**. Conflicts such as wars and civil unrest often result in the damaging of infrastructure with transportation commonly a voluntary or involuntary target.

- **Economic and political shocks**. They are likely to play a growing role in the future, particularly financial issues as most developed nations have accumulated a staggering amount of debt that is likely to be defaulted on.
- Pandemics. At the intersection of natural (biological) and anthropogenic causes (people are vectors and a virus could be mutated by anthropogenic causes), a pandemic is an event of potential profound ramifications.