Disaster Management · GS - III

The frequency of urban floods due to high intensity rainfall is increasing over the years. Discussing the reasons for urban floods, highlight the mechanisms for preparedness to reduce the risk during such events.

EXAM YEAR	PAPER	SUBJECT
2016	GS - III	Disaster Management

MARKS	WORD LIMIT
12.5	~200 words

Answer Hint

Intense rainfall; urbanisation; drainage congestion; wetland encroachment; flood forecasting; early warning; emergency response; resilient infrastructure

Model Answer

Introduction

Urban floods occur when intense rainfall and surface runoff exceed the capacity of drainage systems and natural water bodies. Their impacts are amplified by unplanned urbanisation and inadequate preparedness.

Reasons for Urban Flooding

- **High-intensity rainfall:** Short-duration, extreme rainfall can overwhelm drainage networks.
- **Impervious surfaces:** Roads and buildings reduce infiltration and increase runoff.
- **Wetland and floodplain encroachment:** Loss of natural storage areas restricts water movement.
- **Inadequate drainage:** Undersized drains, poor maintenance and solid-waste blockage cause waterlogging.
- **Unplanned construction:** Building over natural channels disrupts drainage.
- **Climate variability and change:** Changes in rainfall intensity can increase risks in some regions.
- **Institutional fragmentation:** Poor coordination among municipal bodies and disaster agencies delays preventive action.

Preparedness Mechanisms

1. Risk Assessment and Planning

Map flood-prone areas, identify vulnerable settlements and enforce floodplain zoning and risk-sensitive land-use planning.

2. Early Warning

Improve rainfall monitoring, weather forecasts, local warning systems and communication to residents through multiple channels.

3. Drainage and Natural Infrastructure

Maintain stormwater drains, restore lakes and wetlands, preserve natural channels and develop permeable surfaces and rainwater-harvesting systems.

4. Emergency Response

Prepare evacuation routes, emergency shelters, medical teams, rescue equipment and arrangements for vulnerable residents.

5. Public Awareness

Conduct community drills, communicate safe behaviour and establish clear reporting mechanisms.

6. Coordination and Recovery

Coordinate municipal agencies, meteorological services, police and disaster-management authorities. Prepare plans for restoring electricity, drinking water, transport and sanitation after flooding.

Conclusion

Urban flood risk can be reduced through integrated drainage, ecosystem protection, reliable early warning and community preparedness. Risk-sensitive urban planning is essential for long-term resilience.