Disaster Management · GS - III

“Earthquakes occurring along tectonically active coastal regions can trigger cascading disasters, including tsunamis.” Explain the factors responsible for tsunami generation and discuss the measures required to reduce earthquake-related risks.

EXAM YEAR	PAPER	SUBJECT
DAILY PRACTICE 16/10/2026	GS - III	Disaster Management

MARKS	WORD LIMIT
10	~150 words

Answer Hint

Plate tectonics, subduction zones, seismic activity, seabed displacement, earthquake depth, tsunami generation, Pacific Ring of Fire, early-warning systems, coastal evacuation, hazard mapping, resilient infrastructure, public awareness, disaster preparedness.

Model Answer

Introduction

Earthquakes result from the sudden release of energy within the Earth's crust. In tectonically active coastal regions, undersea earthquakes can also generate tsunamis and create widespread hazards.

Causes and Risks

1. Tectonic Activity: Movement of tectonic plates, particularly at subduction zones, causes powerful earthquakes. The Kamchatka Peninsula lies within the Pacific Ring of Fire.

2. Tsunami Generation: A shallow undersea earthquake may generate a tsunami if it causes substantial vertical displacement of the seabed. However, not every earthquake produces a tsunami.

3. Secondary Impacts: Coastal flooding, infrastructure damage, displacement and disruption of essential services can intensify disaster losses.

Disaster Risk Reduction

Governments should strengthen seismic monitoring, tsunami-warning systems, hazard mapping and resilient infrastructure. Coastal communities require evacuation routes, regular drills and public awareness. Building codes and land-use planning should incorporate local seismic risks.

Conclusion

Although earthquakes cannot be prevented, scientific monitoring, preparedness and resilient infrastructure can significantly reduce casualties and economic losses.

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