Understanding Disasters:

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Disaster: → serious disturbance in functioning of community / society.
Def:

↓

losses

↓

material | economical | social | environmental

Types: → Natural / Man-made → ability to destroy → Life / Topography / Infrastructure.

- Earthquakes, cyclones, tsunamies etc. (Cause: Natural)
- Fires, transport accidents, Ind. accidents, Nuclear explosion etc.

Causes:

- Poverty.
- population growth.
- Rapid urbanization.
- Agriculture to industry.
- Envirn. degradation.
- Impact on Envirnment

Reason / scope of disaster:

1. Hazard
2. Vulnerability:

1. Hazard:

Def: phenomenon / situation → substance / Activity / condition.

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Disturbance / damage → life loss / injury / Health impacts / Envn. damage.

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→ people & their properties / services / environments.

(social / economic disruption).

→ Hazardous events may vary in:

* Magnitude of phenomenon
* Probability of occurance
* Extent/severity of Impact

· Magnitude
· Intensity
· frequency.
· Duration
· Area of extent.
· Spatial dispersion

Examples:

Hazard Phenomen	Cause	effect
Condition	Wet floor	Slips, falls
Process	welding	fume fever
Material	Asbestos	Mesothelioma
Thing	Knife	cut
Practice	Rock Mining	Silicosis

& Types: Classification ⇒
→ Socio-Natural.
→ Geological
→ Meterological
→ Hydrological
→ Biological, bacteria, virus etc.
→ Technological
→ Combination of any above.

1. Natural: (Meteorological/Geological/Biological)
→ Exp: cyclones, tsunamis, earthquakes, volcanos.

Socio-Natural: Floods, fires etc.

2. Man-Made:
→ Exp: Accidents, explosions, leakage, pollution, wars etc.

Questions:
1. What is Disaster? Discuss types of disaster with its causes.
2. Define 'Hazard'. Explain diff. types of Hazards with suitable examples in brief.

2. Vulnerability: (Scale of damage).
↳ In ability to withstand the effect of hostile envn.

⇒ Extent → Community / structure / service / Geographic Area. → Damage → Impact.
To which

Factors: physical, Social, Economic, Environmental

→ Poor Design/construction of building
→ Inadequate protection of Asset
→ lack of public info/Awareness
→ Limited Knowledge of Risk/Measures.

More the vulnerability ⇒ More intense impact of disaster.

Reasons for High level of Vulnerability:
- Rapid population growth.
- Environmental degradation. → deforestation, over cultivation, over grazing
- High rate of industrialization/urbanization.
- Impoverished conditions.
- Lack of public awareness/information, preparedness measures.

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Types of Vulnerability: & their Nature:

Types:	Nature:
1. Material/Economic Vulnerability	- Inadequate access to resources.
2. Social Vulnerability	- Dis-integration of local bodies / structures.
3. Ecological	- Degradation of Environment / inability to protect it.
4. Organization	- Lack of strong central / state / local structures.
5. Educational	- Insufficient access to info / knowledge.
6. Attitudinal / Motivational	- Low level of public awareness.
7. Political	- Limited access to political power / representation.
8. Physical	- Weak infrastructure.

Questions: 1. Define Vulnerability. Describe diff. types of it in brief. 3.

5. 2. Mention the reason of increasing vulnerability -

* Measure of Disaster → **RISK**:

→ Risk is a potential of losing something; of value.
  → physical, health, social status, emotion, financial wealth.

→ Risk is a effect of 'uncertainty on objectives'.
  uncertainty → events of damage / loss.
  +ve/-ve Impact on

→ The level of Risk depends on;
(i) Nature of Hazard
(ii) Vulnerability of element.
(iii) Economic value of elements. → people, buildings, crops etc.

→ Mathematically;

$$\text{Risk} = \frac{\text{Hazard} \times \text{Vulnerability}}{\text{Capacity}}$$

Capacity → controlling ability of Hazard.

→ By this eqn., it is said that Hazard & Vulnerability increases the level of Risk but capacity can manage the same.

→ **Risk**: It is define as the probability of harm/experience of adverse effect due to hazard / vulnerability.

Exp: Risk of developing lung cancer due to smoking with diff. probabilities.

→ Risk Assessment: It is the process of;
(i) Identify hazards.
(ii) Analyse/ Evaluate the risk.
(iii) Determine the appropriate ways to eliminate/ control it.

Que: 1. What is Risk? Discuss the factors on which its depends.
2. Describe risk assessment with suitable example in brief.