Module 2

Short questions and answers:

1. State the major data requirements of hazard mapping and the 3 sources for obtaining these data.

- ANS: Data Requirements of Hazard Mapping:
- Spatial characteristics such as location, distribution and dimension ;
- Temporal characteristics and magnitude are the major data requirements for hazard mapping.
- Such information can be obtained through the following sources:

  1) Base maps – topographical maps which gives the information about a particular area.

  2) Remotely sensed images- satellite image which have preferred sensors for visual mapping

  3) Field Data- ground surveying using electronic systems like total station.

2. State the principle of qualitative risk assessment and the method of expressing risk Qualitatively.

- This involves qualitative descriptions or characterisation of risk in terms of high, moderate and low.
- These are used when the hazard information does not allow us to express the probability of occurrence, or it is not possible to estimate the magnitude.
- This approach has widespread application in the profiling of vulnerability using participatory methodologies

  METHOD: RISK MATRIX
- Risk matrices can be constructed to show qualitative risk.
- A risk matrix shows on its y-axis probability of an event occurring, while on the x-axis potential loss.
- The probability is described categorically as low, medium and high.

3. Define Hazard mapping and its objectives?

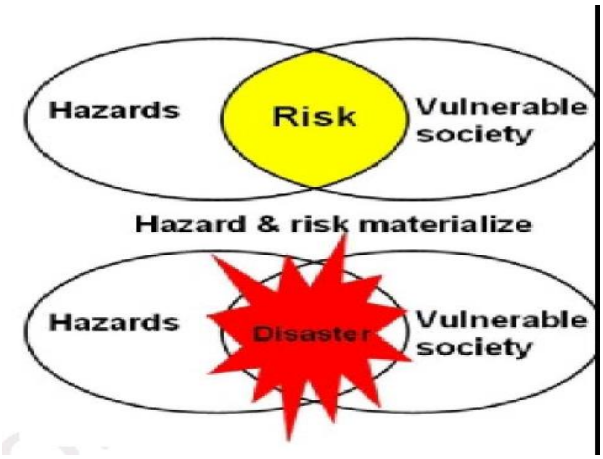
- Hazard mapping involves graphical representation of the location, magnitude and temporal characteristics of the hazard on 2 or 3 dimensional surfaces.
- Objectives of hazard mapping:

  1) To represent spatial and temporal characteristics of the hazard.

  2) To represent the magnitude of hazard using graphical symbols.

4. Explain the concept of disaster risk?

- It is defined as the expected losses during a disaster.
- It is the probability of serious damages, death and injuries occurring as a result of a potentially damaging hazard, when interacting with vulnerable elements such as people and properties.



5. Name the risk assessment methods?

1) Qualitative methods
2) Semi –quantitative methods
3) Quantitative methods.

6. What is disaster response? What are the objectives?

- Disaster responses are the set of activities taken during a disaster or immediately following a disaster, directed towards saving life and protecting property

➢ **<u>Objectives of Disaster Response:</u>**

- Aimed at providing immediate assistance to maintain life, improve health and support the affected population.
- Focused at meeting the basic needs of the people until more permanent and sustainable solutions can be found.
- Preparedness for the first and immediate response is referred to as "emergency preparedness"

7. Explain Hazard and its types?

- Hazard is defined as a potential harm or an adverse effect.
- Sometimes the resulting harm is referred to as the hazard instead of the actual source of the hazard.
- Example: The scarcity of water is considered as a hazard-drought
  The abundance of water is also a hazard – flood
- Basically, hazard is any object or situation which causes damage to property and environment.

Types of hazards:

- Hazards are classified into 6 major categories

1. Geophysical Hazard
2. Hydrological Hazard
3. Meteorological Hazard
4. Climatological Hazard
5. Biological Hazard
6. Extra-terrestrial Hazard

8. Explain Vulnerability and its types?

- Vulnerability is **the inability to resist a hazard or to respond when a disaster has occurred**. For eg:, people who live on plains are more vulnerable to floods than people who live higher up.
- It the degree to which a system is exposed and susceptible to adverse effect of a given hazard
- Vulnerability = Exposure + Resistance + Resilience

➢ **Types of Vulnerability:**

There are mainly 4 types of vulnerability, they are:

Physical Vulnerability

Social Vulnerability

Economic Vulnerability

Ecological or environmental vulnerability

9. Explain about Vulnerability assessment and its types?

- Vulnerability assessment is the process of assessing degree of loss.
- Variation exist in the method of assessing vulnerability, based on the following factors.

1) Type of vulnerability being measured.

2) Scale at which the vulnerability is measured.

3) Type of hazard.

Types of vulnerability assessment:

1) Physical vulnerability assessment

2) Socio economic vulnerability assessment

3) Environmental or ecological vulnerability assessment

10. What are the data's needed for vulnerability assessment?

- **Historical Data:** previously occurred hazard datas, represents the magnitude of a hazard and the level of damage it caused.

- **Socio-Economic Data:** such as level of education, social networks, sanitation, land income, etc…
- **Level of exposure data's, on hazard condition.**
- **Data's on policy, institution and process,** which influence capacity of individuals, households and communities.

11. What are the methods needed for representing vulnerability?

1) Vulnerability indices: based on indicators of vulnerability.

2) Vulnerability Table: tabular representation of vulnerability, which indicates relation between hazard intensity and degree of damage.

3) Vulnerability Curves: graphical representation of vulnerability, which indicates relation between hazard intensity and degree of damage.

- Relative curves: shows percentage of property value as the damaged share of total value to hazard intensity.
- Absolute curves: shows the absolute amount of damage depending on the hazard intensity
- Fragile curves: provides probability of a particular group of elements at risk.

12. Name the components of risk assessment?

Components of risk Assessment:

There are 2 main components:

1) Risk Analysis.

2) Risk Evaluation:

1) Risk Analysis:

- The use of available information to estimate the risk caused by the hazard to individuals, population.

2) Risk Evaluation

- This is the stage at which values and judgements are entered for the decision making process.
- It includes all the results of risk associated with social, economic and environmental.

13. What are the contemporary approaches to risk assessment?

1) Multi-hazard

2) Multi-sectorial:

3) Multi-level

4) Multi-stakeholder

5) Multi-phase

14. What are the factors affecting a disaster response?

- The type of disaster
- The ability to take pre-impact actions
- The severity and magnitude of disaster
- The capability of sustained operations
- Identification of likely response requirements

15. Name the different disaster response actions

1. Search and rescue
2. First aid and emergency medical care
3. Evacuation
4. Evacuation centre management
5. Development of Standard Operation Procedure (SOPs)
6. Immediate repair of community facilities and services
7. Relief Aid
8. Coordination and Communication
9. Psycho-social counselling and stress debriefing
10. Medical services.