

GUJARAT TECHNOLOGICAL UNIVERSITY

BE-5 SEMESTER – OLD PAPER – S22 TO S25 – QUESTION BANK

Subject Name & Code:

Disaster Management- 3150913

Chapter 1: Understanding Disasters

Repeated Questions:

1. **Define Key Terms: Hazard, Vulnerability, Risk, Capacity, Disaster, Mitigation.**
 - **Appeared in:** Summer 2023 (Q1a - 07 Marks), Winter 2022 (Q1a - 03 Marks), Summer 2022 (Q1b - 04 Marks), Winter 2023 (Q1b - 04 Marks), Summer 2025 (Q1a - 03 Marks), Winter 2024 (Q1b - 04 Marks).
 - **Weightage:** Very High. This is the most frequently asked question cluster.
2. **What is Disaster Management? Explain the stages/phases/cycle of disaster management.**
 - **Appeared in:** Summer 2023 (Q4b - 07 Marks), Winter 2023 (Q1c - 07 Marks), Summer 2025 (Q1c - 07 Marks), Winter 2022 (Q2a - 03 Marks - "phases of disaster").
 - **Weightage:** Very High.
3. **Classify disasters with examples. / What are the various types of disasters?**
 - **Appeared in:** Summer 2024 (Q1c - 07 Marks), Winter 2022 (Q3a - 03 Marks), Winter 2024 (Q1c - 07 Marks), Summer 2025 (Q1b - 04 Marks).
 - **Weightage:** High.

Other Important Questions:

4. **What are the aims of disaster management?** (Summer 2022 - Q1a - 03 Marks)
5. **Explain the importance of disaster management for Engineering students.** (Winter 2024 - Q1a - 03 Marks)
6. **Write a short note on the paradigm shift in disaster management in India.** (Summer 2022 - Q1c - 07 Marks)
7. **Explain the concepts of Disaster and Development.** (From Syllabus - Not directly asked but implied in "Understanding Disasters")
8. **Define Coping Capacity.** (Winter 2023 - Q1b - part of 04 Marks)

Chapter 2: Types, Trends, Causes, Consequences and Control of Disasters

Repeated Questions:

A. Earthquakes & Landslides

1. **What are the do's and don'ts during and after an earthquake? / Enlist remedial measures before, during, and after an earthquake.**
 - **Appeared in:** Summer 2023 (Q2a - 07 Marks), Summer 2022 (Q2c - 07 Marks), Summer 2024 (Q4c - 07 Marks).
 - **Weightage:** High.
2. **What is a landslide? Give its causes. / Which parts of India are vulnerable to landslides?**
 - **Appeared in:** Summer 2023 (Q2b - 07 Marks), Summer 2022 (Q2a - 03 Marks), Summer 2025 (Q2a - 03 Marks).
 - **Weightage:** High.

B. Floods & Cyclones

3. **Explain the causes, effects, and precautionary measures for floods. / Steps to be taken before and during a flood.**

* **Appeared in:** Summer 2023 (Q3a - 07 Marks), Summer 2022 (Q2b - 04 Marks), Summer 2025 (Q5c - 07 Marks), Winter 2024 (Q2a, Q2c - 10 Marks total).

* **Weightage:** High.

4. **What are the do's and don'ts before and during a cyclone?** (Summer 2024 - Q5b - 04 Marks)

C. Tsunami

5. **Describe the early warning system for a Tsunami. / Explain how science and technology is used for Tsunami management.**

* **Appeared in:** Summer 2023 (Q2b(OR) - 07 Marks), Summer 2024 (Q5c - 07 Marks).

* **Weightage:** Medium.

D. Heat Wave & Cold Wave

6. **What are heat waves and cold waves? Discuss their effects and government actions.**

* **Appeared in:** Summer 2023 (Q3b - 07 Marks), Winter 2022 (Q2c - 07 Marks), Summer 2024 (Q5a - 03 Marks).

* **Weightage:** Medium.

E. Biological Disasters (Epidemics, Forest Fire)

7. **What are the possible causes of forest fire? What damages may occur?**

* **Appeared in:** Summer 2023 (Q3a(OR) - 07 Marks), Summer 2024 (Q5b - 04 Marks).

* **Weightage:** Medium.

8. **Explain different types of biological disasters. / How to control a biological disaster?**

○ **Appeared in:** Summer 2025 (Q2c - 07 Marks), Summer 2022 (Q3a - 03 Marks).

○ **Weightage:** Medium.

F. Technological & Man-made Disasters

9. **Enlist and explain technological/man-made disasters. Discuss any one in detail with a case study.**

* **Appeared in:** Winter 2022 (Q3c - 07 Marks), Summer 2022 (Q3c - 07 Marks), Summer 2025 (Q2b - 04 Marks), Winter 2023 (Q3c(OR) - 07 Marks).

* **Weightage:** High.

G. Drought

10. **What is drought? Explain its types and preventive measures.**

* **Appeared in:** Summer 2022 (Q3b - 04 Marks), Winter 2023 (Q3c - 07 Marks).

* **Weightage:** Medium.

H. Climate Change

11. **What is Climate Change? Justify that it leads to an increased number of disasters.**

* **Appeared in:** Summer 2023 (Q4a - 07 Marks), Winter 2024 (Q3a(OR) - 03 Marks).

* **Weightage:** Medium.

Other Important Questions:

12. **What is an avalanche? Give its causes.** (Winter 2023 - Q2a - 03 Marks)
13. **Explain Tsunami Disaster.** (Winter 2023 - Q3a(OR) - 03 Marks)
14. **Discuss the effects of Landslides.** (Winter 2023 - Q3a - 03 Marks)
15. **Give classification of Lightning.** (Winter 2023 - Q3b - 04 Marks)
16. **What are the possible causes, precautions, and damages due to a Nuclear Disaster?** (Summer 2023 - Q3b(OR) - 07 Marks)
17. **What are the preventive measures against Mining disasters?** (Summer 2022 - Q3a(OR) - 03 Marks)
18. **Enlist various losses due to flood and earthquake.** (Winter 2022 - Q2c(OR) - 07 Marks)
19. **Differentiate between natural and manmade disaster.** (Summer 2025 - Q4a - 03 Marks)
20. **Describe the measurement technique for the magnitude of an earthquake.** (Winter 2024 - Q2b - 04 Marks)
21. **Design criteria for earthquake-resistant building. Explain in detail.** (Winter 2024 - Q2c(OR) - 07 Marks)
22. **What are the harmful effects of Forest Fire?** (Summer 2024 - Q5b - 04 Marks)
23. **What are possible causes of fire incidents in cities?** (Summer 2024 - Q5a - 03 Marks)

Chapter 3: Disaster Management Cycle and Framework

Repeated Questions:

1. **Explain the Disaster Management Cycle. / Explain various stages of disaster management.**
 - **Appeared in:** Summer 2023 (Q4b - 07 Marks), Winter 2022 (Q4c(OR) - 07 Marks), Summer 2024 (Q3c(OR) - 07 Marks).
 - **Weightage:** High.
2. **Describe the Early Warning System and its elements. / Write a short note on the early warning system.**
 - **Appeared in:** Summer 2023 (Q1a - part of 07 Marks), Summer 2022 (Q3b(OR) - 04 Marks), Winter 2024 (Q3c - 07 Marks), Winter 2022 (Q5a - 03 Marks), Summer 2025 (Q5a(OR) - 03 Marks).
 - **Weightage:** High.
3. **Explain Risk Assessment and Analysis. / What is risk mapping, zonation, and micro-zonation?**
 - **Appeared in:** Winter 2023 (Q4a - 03 Marks), Winter 2023 (Q4b - 04 Marks), Summer 2024 (Q3b(OR) - 04 Marks), Summer 2025 (Q3a - 03 Marks), Summer 2025 (Q3a(OR) - 03 Marks).
 - **Weightage:** High.
4. **What is an Emergency Operation Centre (EOC)? Explain its features and functions.**
 - **Appeared in:** Winter 2022 (Q1b - 04 Marks), Summer 2022 (Q3c(OR) - 07 Marks), Winter 2024 (Q3b - 04 Marks), Winter 2023 (Q4c(OR) - 07 Marks).
 - **Weightage:** High.
5. **Explain Search and Rescue activity and its objectives.**
 - **Appeared in:** Winter 2022 (Q4b - 04 Marks), Winter 2023 (Q4a(OR) - 03 Marks), Winter 2024 (Q3b(OR) - 04 Marks).
 - **Weightage:** Medium.
6. **Describe structural and non-structural mitigation measures.**
 - **Appeared in:** Summer 2023 (Q4a(OR) - 07 Marks), Winter 2022 (Q5b(OR) - 04 Marks).
 - **Weightage:** Medium.
7. **Write a short note on the Yokohama Strategy.**
 - **Appeared in:** Summer 2022 (Q4b - 04 Marks), Winter 2022 (Q3b(OR) - 04 Marks), Winter 2024 (Q3c(OR) - 07 Marks), Summer 2025 (Q3c - 07 Marks).
 - **Weightage:** High.

Other Important Questions:

8. **Explain disaster communication during a disaster.** (Summer 2025 - Q3b - 04 Marks)
9. **Describe evacuation during a disaster.** (Summer 2025 - Q3b(OR) - 04 Marks)
10. **Write a short note on Capacity development.** (Winter 2023 - Q4b(OR) - 04 Marks)
11. **What is Seismic microzonation? Explain in brief.** (Winter 2024 - Q3a - 03 Marks)
12. **Explain reconstruction and redevelopment in restoration of critical infrastructure.** (Summer 2025 - Q3c(OR) - 07 Marks)
13. **What is the Incident Command System?** (From Syllabus - Implied in "During Disaster" framework)
14. **Explain Damage and Needs Assessment and Early Recovery.** (From Syllabus - Implied in "Post-Disaster")

Chapter 4: Disaster Management in India

Repeated Questions:

1. **Explain the important provisions/salient features of the Disaster Management Act, 2005.**
 - **Appeared in:** Summer 2023 (Q5a - 07 Marks), Summer 2024 (Q2c - 07 Marks), Summer 2022 (Q4c - 07 Marks), Winter 2024 (Q4c - 07 Marks), Summer 2025 (Q4b(OR) - 04 Marks).
 - **Weightage:** Very High.
2. **What is the role of NDRF (National Disaster Response Force) in disaster management?**
 - **Appeared in:** Summer 2023 (Q4b(OR) - 07 Marks), Summer 2024 (Q3c - 07 Marks), Winter 2023 (Q5b - 04 Marks), Summer 2025 (Q5c - 07 Marks).
 - **Weightage:** High.
3. **Enlist major/mega disasters of India and explain any one in detail. / Explain any two major disasters in India.**
 - **Appeared in:** Summer 2023 (Q1b - 07 Marks), Summer 2024 (Q2a - 03 Marks), Winter 2023 (Q5c - 07 Marks), Summer 2025 (Q4c - 07 Marks).
 - **Weightage:** High.
4. **Explain the role of NDMA (National Disaster Management Authority). / State the role of NDMA and SDRF.**
 - **Appeared in:** Summer 2022 (Q4a - 03 Marks), Winter 2023 (Q2c(OR) - 07 Marks), Winter 2022 (Q4b(OR) - 04 Marks).
 - **Weightage:** High.
5. **What is the role of Non-Government Agencies (NGOs) in disaster management?**
 - **Appeared in:** Summer 2024 (Q3a - 03 Marks), Summer 2022 (Q4c(OR) - 07 Marks), Winter 2024 (Q4c(OR) - 07 Marks).
 - **Weightage:** Medium.
6. **What is the role of the National Executive Committee (NEC) at state and district/national level?**
 - **Appeared in:** Winter 2023 (Q5c(OR) - 07 Marks), Summer 2025 (Q4c(OR) - 07 Marks).
 - **Weightage:** Medium.

Other Important Questions:

7. **Explain institutional and financial mechanism for disaster management in India.** (Summer 2024 - Q2c(OR) - 07 Marks)
8. **List lessons learnt from past disasters of India.** (Summer 2024 - Q2b - 04 Marks)
9. **Enlist different Government agencies for disaster management. Explain the role of any one.** (Winter 2024 - Q4b - 04 Marks)
10. **Write the roles of SDRF (State Disaster Response Force) in Disaster management.** (Winter 2024 - Q4a(OR) - 03 Marks), (Winter 2023 - Q5a - 03 Marks), (Summer 2025 - Q5c - part of 07 Marks)
11. **Explain the role of an Engineer to deal with Man-made disaster.** (Winter 2024 - Q4b(OR) - 04 Marks)
12. **Write a short note on the National Plan on Disaster Management.** (Winter 2023 - Q5b(OR) - 04 Marks), (Summer 2025 - Q5b(OR) - 04 Marks)
13. **List features of disaster management policy.** (Summer 2025 - Q4a(OR) - 03 Marks)
14. **Explain the role of the Corporate Sector in DM.** (Summer 2024 - Q3b - 04 Marks)
15. **Why is international collaboration important in DM?** (Summer 2024 - Q4b - 04 Marks)
16. **Discuss IDNDR, Hyogo Framework of Action.** (From Syllabus Image - Implied in global frameworks influencing India)

Chapter 5: Applications of Science and Technology for Disaster Management & Mitigation

Repeated Questions:

1. **Explain the role and applications of Remote Sensing (RS) and GIS in Disaster Management.**
 - **Appeared in:** Winter 2022 (Q5c - 07 Marks), Summer 2022 (Q5c - 07 Marks), Winter 2024 (Q5c - 07 Marks), Summer 2025 (Q5c(OR) - 07 Marks).
 - **Weightage:** Very High.
2. **Explain the role of GPS in Disaster Management.**
 - **Appeared in:** Winter 2022 (Q1c - 07 Marks), Summer 2022 (Q5b(OR) - 04 Marks), Winter 2023 (Q5a(OR) - 03 Marks), Winter 2024 (Q5a - 03 Marks), Summer 2025 (Q5a - 03 Marks).
 - **Weightage:** Very High.
3. **Enlist and explain S&T Institutions for Disaster Management in India. (e.g., ISRO, DRDO, IMD)**
 - **Appeared in:** Summer 2022 (Q5b - 04 Marks), Winter 2024 (Q5b, Q5c - 11 Marks), Winter 2023 (Q5b(OR) - 04 Marks).
 - **Weightage:** High.
4. **Explain the role of ISRO/DRDO in Disaster Management.**
 - **Appeared in:** Summer 2023 (Q5b - 07 Marks), Summer 2022 (Q5a - 03 Marks), Winter 2024 (Q5b - 04 Marks).
 - **Weightage:** Medium.
5. **What is the role of Information Technology (IT) in Disaster Management? / Discuss the role of IT during a disaster.**
 - **Appeared in:** Winter 2023 (Q4c - 07 Marks), Summer 2022 (Q5a(OR) - 03 Marks), Summer 2025 (Q5b(OR) - 04 Marks).
 - **Weightage:** Medium.

Other Important Questions:

6. **What is Remote Sensing technology?** (Summer 2024 - Q1b - 04 Marks)
7. **What is GPS technology?** (Summer 2024 - Q1a - 03 Marks)
8. **Explain the importance of DRDO for disaster management.** (Winter 2024 - Q5b - 04 Marks)
9. **Explain in brief the working of GPS.** (Winter 2024 - Q5a - 03 Marks)
10. **What is Land Use Planning and Development Regulations? What are its features?** (Summer 2022 - Q5c(OR) - 07 Marks)
11. **Describe the role of Disaster Safe Designs and Constructions.** (Winter 2022 - Q5c(OR) - 07 Marks)
12. **Explain the importance of Communication in effective DM. How does ISRO play a role in providing communication facilities?** (Summer 2024 - Q4c - 07 Marks)
13. **Explain Information and Communication Technology (ICT) for flood management.** (Winter 2023 - Q4c - 07 Marks)
