

**JAIPUR ENGINEERING COLLEGE & RESEARCH CENTRE, JAIPUR**  
**DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING**

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# **DISASTER MANAGEMENT**

## **UNIT-IV Part-1**

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# MAN-MADE DISASTERS

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- A Man-Made Disaster is a Disaster resulting from human-intent, negligence, or error.
- A serious disruption of normal life triggered by a human-induced hazard causing Environmental, Economic or Life-Loss.
- These are usually associated with Anthropogenic factors .
- Manmade disasters can be both Intentional and Unintentional.
- All kinds of man-made disasters lead to human suffering , loss of life and long term damage to a nation's economy as it results in huge loss of life and property. It further affects a person's mental, physical and social well-being.

# NATURAL vs MAN-MADE DISASTERS

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Natural Disaster	Man-made Disaster
Uncontrollable, natural causes and take place regardless of human influence	Human activity the direct cause
Cause extensive damage and losses	Both intentional or unintentional causes have devastating effects and losses
Preparation and damage control may minimize the effects	Prevention, vigilance, and planning may avoid it
Can be impacted by human activity	Can be amplified by natural forces
Discernible natural causes and contributing hazard events	Come in various forms and often from an obscure origin

# TYPES OF MAN-MADE DISASTERS

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- Nuclear Disaster
- Chemical Disaster
- Biological Disaster
- Technological Disaster
- Industrial Disaster
- Mining Disaster
- Transportation Disaster
- Terrorism related
- Fire Disaster
- Epidemic
- Miscellaneous

# NUCLEAR DISASTER

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It is a type of Explosion that derive its force from Nuclear reactions of types Fission and Fusion.

## EXAMPLES

Atomic Bombs/A-Bombs/Fission-Bombs (Fission-Based)

Hydrogen Bombs/H-Bombs/Fusion-Bombs (Fusion-Based)

A Nuclear and Radiation accident is defined by the International Atomic Energy Agency as “An Event that leads to significant consequences to people, the environment or the facility.”

# NUCLEAR DISASTER: CONSEQUENCES

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- Radiation is released into the environment and people get hurt.
- Nuclear Radiation keeps on showing its effect for a considerable period of time even after its explosion, and those who survive become mental and physical wrecks due to the impact of nuclear radiation.
- Two of the most famous nuclear accidents occurred at the Three Mile Island reactor-2 in the United States and the Chernobyl reactor-4 in the former Soviet Union.

# CHEMICAL DISASTER

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By their nature, Chemical Disaster may be defined as the Manufacture, Storage, and Transport of chemicals which may lead to the accidents waiting to happen.

Also, Disasters that are caused by the Excessive Use and Misuse of chemicals in Industries are termed Chemical Disasters.

## *ILL-EFFECTS*

The irresponsible handling of powerful chemicals can cause widespread devastation. Chemicals can be Corrosive, Toxic, and they may React, often Explosively.

# CHEMICAL DISASTER: CAUSES

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- Sometimes handling of hazardous chemicals in an irresponsible way can cause chemical disasters.
- Chemical disasters may also be caused by industrial Accidents.
- Chemical weapons are also the main cause of such disasters.



# CHEMICAL DISASTER: CONSEQUENCES

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- The impacts of Chemical accidents can be Deadly, for both Human Beings & Environment.
- Chemical Weapons are also Weapons of Mass-Destruction.
- Sometimes handling of hazardous chemicals in an irresponsible way can cause much destruction.
- The poisonous gases spread in the atmosphere and the people who inhale the same air, face dangerous consequences.

# BIOLOGICAL DISASTER

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Biological Disasters define the devastating effects that may be caused by an enormous spread of a certain kind of living organism - that may be the spread of a disease, a virus, an epidemics, but also just a sudden growth of the population of a certain kind of plants or animals, e.g. Ebola and swine flu.

They are referred as poor man's nuclear bomb as they are easy to manufacture, transport and have the ability to kill hundreds and thousands of people.

# BIOLOGICAL DISASTER: CAUSES

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Biological disaster spreads through the organism that is developed in the form of BACTERIA, VIRUSES or MICROBES. Biological agent spread fast in the environment and then makes an attack on the human beings. The people inhale these microbes. When these microbes find themselves a host body, they start affecting the immune systems of the body. Microbes' also enter human body through open wounds or cuts.

# BIOLOGICAL DISASTER: CONSEQUENCES

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- The attack of the microbes is generally slow but once they are spread in the body, it becomes difficult to control them.
- Sometimes it takes the life of the affected persons.
- Many a time, it becomes difficult to diagnose the illness caused by these microbes and it proves to be fatal.

# TECHNOLOGICAL DISASTER

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A Technological Disaster is an event caused by a Malfunction of a Technological Structure and/or some Human Error in Controlling or Handling the technology.

- The effects of a disaster on families and individuals may be long lasting and can endure for years.
- Symptoms may appear gradually, and impacts may not be seen immediately.
- All types of disasters are challenging, but technological disasters tend to be even more difficult.

# TECHNOLOGICAL DISASTER: CONSEQUENCES

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- Technological disasters are stressful, especially because they are Unpredictable.
- Individuals, families, and communities are affected.
- Some of the results include Income Loss, Loss of Job Security, Uncertainty about the Future, Family Conflict, and Stress.
- In particular, Post-Traumatic Stress Disorder (PTSD), Depression, and Anxiety symptoms are common responses to a disaster.
- Impacts may persist over time for some individuals, while others show resilience earlier.

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