



TUTOR'S GUIDE

E9: Disaster Management

Tutor's Guide

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Introduction and course structure

Disasters – both natural and human-induced – have become a recurring phenomenon, causing irreparable loss to humanity and its valuables. Development is partially responsible for not only the frequency of disasters, but for loss as well. Natural hazards do not discriminate between whom or what they affect; the enormity of their impact depends upon how well a nation, a settlement, a neighbourhood, a family, or an individual responds or reacts to the hazards. This response depends also upon how well prepared the respondent is for managing the aftermath.

From the Stockholm Conference in 1972, to the 1992 Earth Summit, to the World Summit in 2002, the issue of sustainability has been amply emphasised. Agendas have been set, action plans formulated, and actions taken at various levels within nations, across nations, globally, and locally. But when disasters strike, it seems that all action plans and efforts towards sustainability are zeroed – there have been instances when the impacts have been so severe that the cost of damages has surpassed the national incomes of the affected nations. Apparently, human actions and thoughts are too small to face the wrath of nature.

However, technology and innovations in communications have opened many doors. Natural disasters like earthquakes, cyclones and hurricanes cannot be prevented, but their impacts can be reduced by building resilience in terms of building human capacities or resistance of properties; removing people from vulnerable sites or spatial planning. When taken before the onset of a hazard, these actions help save lives and assets, reduce vulnerability and resettle or rehabilitate the affected.

In the past, most management efforts were reactive and response-oriented and the scope of management was limited to response and recovery. However, after the declaration of International Decade of Natural Disaster Reduction (IDNDR) during the 1990s, there was a paradigm shift of emphasis from post-disaster actions to preparedness and mitigation. Moreover, management of disasters requires handling multidisciplinary activities within a small time frame. Thus, you as managers in such circumstances will be dealing with many sensitive situations, such as the lives of many people in agony and despair, and will be responsible for protecting assets that are of value to these people as well as the nation.

Disaster management is a very complex issue, the success of which lies in your capacity to understand the situation, prepare for it, and keep yourself updated and informed of the tools and technology available to handle each action. This requires awareness, training and education. This course is an effort towards education and capacity building for managers who will be involved in disaster management within a company, an industry, or a nodal agency at the local, state or national level.

The goal of introducing this course in the MBA is to sensitise young managers to the demanding and challenging task of building a disaster-



resilient and sustainable world. Therefore, the objectives of this course are to enable you, as a disaster manager, to:

- Explain the complexities of natural and human-induced disasters, and the enormity of loss that can be caused by them.
- Appreciate the need for disaster mitigation and preparedness for loss reduction and efficient management.
- Be able to go through the process of preparedness in terms of risk assessments and planning.
- Explain the critical nature of emergency preparedness and management and the process involved.
- Learn from the best practices on institutional and legal mechanisms that have worked in some developed countries and achieved success in huge loss reduction in terms of lives and property.
- Describe the steps involved in post-disaster response and recovery.
- Appreciate and build capabilities in planning for business continuity in the event of disasters.
- Set goals and objectives and use decision-making tools for emergency management.
- Ultimately be able to handle disasters effectively to achieve the goal of building safer and sustainable communities.

Duration of the course

The course is 120 hours, broken up as follows:

- 40 hours of self-study of the course material
- 10 hours of contact with the university/institute
- 70 hours for exercises, library reading, and practical training work.

Methodology

The course is based on distance learning and provides sufficient reading material, as well as learning activities that recapitulate the lessons.

The material provided has references and extracts from the references in the form of handouts, which support the discussions. Links to websites are also provided and it is strongly suggested that the students visit these sites for a better understanding of the subject. It is also recommended that students try to contact the nodal agency involved in emergency or disaster management in their hometown to understand the ground situation and be able to relate to the course more effectively.

Learning activities are placed throughout the course to help learners review the issues covered. There are also some questionnaires which, if answered, will encourage further research and prepare the students for examination. Reference links to detailed documents are provided for reading on the internet.

Assignments

There are two assignments worth 40 marks, out of which:

- Assignment 1 – Preparation of a Disaster Mitigation Plan – 20 per cent
- Assignment 2 – Hazard Vulnerability and Risk Assessment – 20 per cent.

There is also a three-hour examination at the end of the term worth 60 per cent.

The two assignments are designed to combine the main learning objectives of the different modules into two summary exercises. These are meant to provide the learner with the opportunity to combine and integrate the main lessons into a broader and more complete understanding of disaster reduction and emergency management, as well as to gain a practical perspective of how emergency planning works during an actual disaster.

- Assignment 1 is to be completed after Module 3.
- Assignment 2 is to be completed after Module 6.



Assignment 1 focuses on the interface between humans and disasters. The first part of the assignment should explain how humans often turn hazards into disasters and why ‘natural hazards’ are not always ‘natural’. This part of the assignment should also explain how human vulnerability is generated and why disasters do not impact all people or sectors of a society equally. For example, what makes some people more vulnerable than others? Examples from major disasters should be cited to illustrate the above points.

The second part of the assignment should identify approaches to reduce hazards and the impact of disasters on people. This should focus on mitigation and preparedness rather than response and recovery. The learner should consider the importance of international strategies as well as mitigation efforts that can be taken at a country or community level. Specific examples should be cited to illustrate the above points.

Assignment 2 focuses on disaster response and recovery. The learner should assume the role of an emergency planner and consider what is required to effectively respond to a major disaster with widespread humanitarian consequences such as a major earthquake. As an emergency planner, the learner is expected to explain how s/he would co-ordinate and organise the response, what needs would be assessed, and how these would be assessed.

As part of this assignment, the learner is also expected to identify and explain any planning principles that might guide his or her planning. For example, are there better practices and standards that you might consider when planning and leading a response? Are there general principles or lessons learned that you would consider to ensure that the response is linked to long-term community recovery and development efforts?

The completed assignment should be ten pages (double spaced) in length. This does not include references, which should be in APA format.

Final examination

The final exam is worth 60 marks, and will include all topics covered in each module.

Structure of the course

The course material focuses on three main phases of a disaster cycle: the pre-disaster phase, during the disaster, and the post-disaster phase. The contents of the course are distributed over seven modules.

While the overall objectives are to understand and learn how to manage some of the most critical and complex situations created by disasters and their aftermath, the course is designed to also build skills for informed planning and provide leadership and decision-making.

Module 1: Understanding disasters and emergency management

Overview

Module 1 introduces the definition of disaster management, the effects of disasters around the world, and the four pillars on which emergency management is founded. We will also discuss and clarify various terms used by disaster management professionals.

Learning objectives

The learner will be able to:

- *describe* global disaster trends including refugee crises
- *explain* why disasters are on the rise around the world
- *explain* the difference between emergencies, disasters and complex emergencies
- *discuss* how disasters are similar and different from one another (disaster typology)
- *identify* disaster myths
- *explain* the disaster management cycle and the four phases of emergency and disaster management
- *identify* the principles of disaster management
- *define* various terms used in disaster management.



Module 2: The management of disasters around the world

Overview

Module 2 discusses the management of disasters around the world. It outlines the responsibilities of governments, the role of the United Nations as well as non-governmental organisations in preparing for and responding to disasters and other humanitarian crises.

Learning objectives

The learner will be able to:

- *explain* roles and responsibilities of governments in preparing for and responding to emergencies and disasters
- *describe* policy and institutional frameworks for disaster management in developed and developing countries
- *discuss* the role of the community in preparing for and responding to disasters
- *describe* the International Strategy for Disaster Reduction
- *describe* the roles of the United Nations, non-governmental organisations, as well as the military in responding to disasters and humanitarian crises.

Module 3: Risk reduction: assessment and mitigation of hazards and risks

Overview

Module 3 discusses hazard mitigation and preparedness. The module provides: a practical overview of hazards and risks including different types of hazards and how these may impact communities; the principles of hazard mitigation; and tools to identify and manage hazards.

Learning objectives

The learner will be able to:

- *identify* different types of hazards and risks
- *explain* how different types of hazards can affect people and communities (vulnerability)
- *discuss* the principles of hazards and risk assessment
- *describe* tools and practices to identify and analyse hazards and risks
- *describe* the relationship between core infrastructure and critical inter-dependencies and mitigation strategies
- *discuss* mitigation strategies and list the steps involved in preparation of disaster mitigation plans
- *explain* community-based preparedness and planning, including land-use planning and the use of building codes for disaster resistance.



Module 4: Planning for emergencies

Overview

Module 4 focuses on emergency preparedness and planning. The module provides a practical overview of emergency planning with emphasis on the all-hazards/common consequence approach. The learner will also learn how to develop contingency plans as well as the importance of business continuity plans. Community preparedness is also discussed as a critical component to good emergency preparedness practice.

Learning objectives

The learner will be able to:

- *describe* the all-hazards/common consequence approach to emergency planning
- *explain* when and how to develop a contingency plan
- *explain* and develop business continuity planning
- *describe* community resilience
- *discuss* why it is critical to work with communities in developing preparedness and disaster reduction plans
- *describe* and *adopt* good practices to promote public and household preparedness.

Module 5: Response: managing emergencies and disasters

Overview

Module 5 focuses on operational response structures and mechanisms. The module emphasises the importance of developing and implementing a systematic approach to respond to emergencies and disasters.

Learning objectives

The learner will be able to:

- *explain* the role played by early warning systems in mitigating the impact of natural disasters
- *describe* the principles and components of an incident management system
- *understand* how an emergency operations centre operates
- *describe* critical roles and responsibilities in an emergency
- *describe* various standard operating procedures that will facilitate an efficient response to an emergency
- *demonstrate* how critical resources may be managed during emergencies
- *describe* the importance of communication in co-ordinating an efficient response
- *explain* the dynamics and complexities of post-disaster response, including rapid assessment, resource management and communication
- *discuss* the subtleties of urban search and rescue.



Module 6: Relief and recovery

Overview

Module 6 focuses on the provision of relief and assistance during complex humanitarian crises. The module focuses on both natural disasters and refugee crises around the world. Attention is given to the types of needs that populations may experience as a result of both natural and human-induced disasters (including wars and conflicts) as well as best practice tools and methodologies to assess, plan for and implement effective responses. Immediate, medium and long-term planning needs are discussed, including implications for recovery and development.

Learning objectives

The learner will be able to:

- *define* a complex humanitarian crisis
- *describe* a population's needs and how these may change over time (immediate, medium- and long-term)
- *apply* assessment tools that may be used to identify beneficiary needs
- *discuss* the importance of implementing interventions in accordance to international standards of humanitarian assistance.

Module 7: Training and exercising

Overview

Module 7 focuses on the importance of training and exercising to enhance planners' and responders' knowledge and skills as well as the overall emergency management capacity of an organisation. The learner will learn how to identify training needs, different types of training methodologies, as well as when and how to implement exercises.

Learning objectives

The learner will be able to:

- *explain* the importance of training to emergency managers and humanitarian workers
- *describe* how training needs can be identified
- *describe* different types of exercises and scenarios
- *develop* and implement simple exercises that can enhance response capacities.



Tutor's guide

It may be noted that while the course material has been prepared for all kinds of disasters, case studies and examples have been taken mostly from disasters common to south Asia. The material has been written to address the issue of the gaps between systems followed in the developed and the developing world in handling disasters. One major difference to note is that in most developing countries, the responsibility of handling disasters rests with different nodal agencies; while, in most developed nations, the system of operation is the same for preparedness and management for any type of disaster, which has proven to be much more effective.

It is recommended that the terminology and concepts used for defining disasters, mitigation, risks and so on follow what is provided in the material, so that the tutors and students have a common understanding and uniform terminology. The definitions and concepts used have been conceived after a lot of research and reading by the authors.

It would be ideal if the tutors could identify different role-players designated for various activities in the country. For example, who is the incident command officer in your country? The designation may be different but the role may be the same for a person in charge of an emergency or a disaster.

The tutor may identify a case study for building up a live scenario to enable students to work on a real in-country situation for their first assignment. The case study may be prepared in such a way that issues come out clearly for the students to be able to set the goals and objectives and then develop a strategy for mitigation activities.

The case study must also identify active community groups and existing local and national mechanisms to enable students to recommend or identify the stakeholders and assign responsibilities. Also, from the details provided, students should be able to visualise the constraints, vulnerabilities and possible hazards in the area, and, if possible, describe historical data of recent events and lessons learned. Tutors will notice that step-by-step procedures in the form of worksheets have been given in the material for preparation of the mitigation plan.

Training didactics

Tools and techniques

It would be ideal to set up two-way communication through the Internet between students and the tutor for faster delivery of the assignments and for clarifying questions. Otherwise, whatever mode or channel is set up for submitting assignments, the tutor needs to ensure that the assignments are completed within the time frame provided for each block and that students have a mechanism for asking questions.

After each chapter there are references and links to various Internet sites that support the handouts provided in the course. If possible, the tutor should review the websites and make printouts of relevant material that can be sent to students without Internet access.

Schedule during contact hours

The objective of the contact time is to introduce the tutor and students, and learn about their backgrounds. Also, this is an opportunity for students to see live demonstrations of what they have read, in the form of tools and equipment and how the existing national and local management systems deal with disasters. There will also be time to clarify the students' questions and to conduct group discussions.

In the first two contact hours students will become familiar with a disaster scenario. They should provide information on the country's vulnerability to different types of disasters, historical information and causes, if they have been identified. They should be informed of the country's system responsible for disaster management, preparedness and mitigation efforts. Applicable laws and Acts should also be discussed. If possible, provide a brief write-up of statistics and types of disasters within the country, a flow chart of the institutional arrangements, and a brief description of the legal situation. As well, the latest information on the different institutions offering courses on the subject should be provided. If possible, video footage of a recent devastating disaster should be shown so students can visualise the complexity of the job ahead.

The next three hours should be spent discussing various kinds of equipment and technology available in the country that help in preparedness, warning or predictions, communications and information collection. If possible, arrange a site visit to a meteorological department to enable students to see how prediction systems, satellite imagery, or sensors work. Time in this section should also be spent describing the case study selected for the disaster mitigation plan exercise. Ideally, the step-by-step procedure for developing the mitigation should be discussed. This contact time may be scheduled after Module 2 is complete.

During the third two hours it would be appropriate to discuss the emergency preparedness and management system followed by many developed nations compared with your own country situation. Provide highlights of the advantages of this system. If possible, discuss an example from a major catastrophe dealt with by an emergency management team from any of the developed countries and relate this to how local systems could be improved. Discussion should provide information on existing changes in the institutional framework, focusing on the efforts being made to shift the relief and reactive paradigm to preparedness and mitigation. Also, stories of successful handling of emergencies within their own country should be presented to provide ideas for the second assignment.

During the fourth three hours, the two-hour exam may be conducted. One hour should be spent on group discussions/panel discussions with a



high-level team from the disaster management organisation providing clarification on the issues.

Course evaluation

Students should be provided with an opportunity to evaluate the course content in terms of:

- relevance of the material provided
- effectiveness of the learning activities
- clarity and standard of the contents
- usefulness of the assignments for better understanding
- usefulness of the contact hours.

Summary

The authors recognise the challenge for the tutor and for the student. The content is extensive and will require practice and exercising in order to effectively apply the materials in this course to a real situation. However, the rewards for being well versed and prepared to deal with major disasters are huge, not only for the well-trained emergency planner, but also for your industries and your communities.

Assignment 1



Assignment

This assignment focuses on the interface between humans and disasters.

The assignment should be about 10 pages in length (double spaced). All references are to be cited in APA format.

Part 1

Use examples from major disasters to explain the concepts below:

- How humans often turn hazards in to disasters and why 'natural hazards' are not always 'natural'.
- How human vulnerability is generated and why disasters do not affect all people or sectors of a society equally. For example: what makes some people more vulnerable than others?

Part 2

Identify approaches used to reduce hazards and the impact of disasters on people.

- Focus on mitigation and preparedness rather than response and recovery.
- Consider the importance of international strategies as well as mitigation efforts that can be taken at a country or community level.
- Cite specific examples to illustrate your points.



Assignment 2



Assignment

This assignment focuses on disaster response and recovery.

The assignment should be in a case study format and about 10 pages in length (double spaced). References are to be cited in APA format.

Put yourself in the place of an emergency planner and consider what you would need to do to effectively respond to a major disaster with widespread humanitarian consequences such as a major earthquake.

In your role as the emergency planner, explain how you would coordinate and organise the response, what needs you would assess and how you would carry out these assessments.

Identify and explain any planning principles that might guide your thinking. For example:

- Are there better practices and standards that you might want to consider when planning and leading a response?
- Are there general principles or lessons learned that you would consider to ensure that the response is linked to long-term community and recovery effort?

Final examination

Emergency Management – Exam Questions

Date:

Start time: XX pm

Time allowed: 3 hours, plus 10 minutes reading time

Total marks: 100 marks

Weighting: 60 per cent of course

Instructions: Answer ALL questions.

Answer the questions directly in the answer booklet provided.

Read each question carefully. Answer only what is asked for.

Please write clearly.

Summary of paper:

Question	Topic	Marks
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
TOTAL		100



Question 1

Define any **four** of the following terms and provide a descriptive example:

1. Emergency
2. Disaster
3. Humanitarian crisis
4. Complex emergency
5. Refugee
6. Internally displaced persons

Question 2:

Name and explain **six** characteristics of the disaster typology. Describe in your explanation how these would affect a community.

Question 3:

Name **four** reasons why disasters are increasing around the world?

Question 4:

What is the difference between mitigation, preparedness and disaster management? Provide an example of each.

1. Mitigation
2. Preparedness
3. Disaster management

Question 5:

Define and explain risk, hazard and vulnerability. Provide an example of each.

1. Risk
2. Hazard
3. Vulnerability

Question 6:

What does ICS stand for in emergency response management? Name **four** components of ICS and explain the functions of each during an emergency.

Question 7:

What is an EOC and how is it different from ICS. Name and describe the main functions of an EOC.

Question 8:

Why is it important to link disaster management and recovery to development?

Name **three** ways this can be achieved.

Question 9:

You have been asked to conduct a relief assessment after a major earthquake in a developing country.

Explain why each is important to assess after a disaster.

1. Water
2. Hygiene and sanitation
3. Food and nutrition
4. Health care
5. Protection
6. Education
7. Psychosocial support

Question 10:

You have been appointed as the occupational health and safety representative for a major corporation. Suppose your company wanted to establish a mitigation programme. What are the **four key** strategies?

List each strategy and provide at least **one** concrete example of mitigation activities for each strategy.

Strategy 1

Strategy 2

Strategy 3

Strategy 4

Question 11:

Why are exercises important in emergency management?

Identify at least **three** specific benefits of exercises?



Question 12:

Explain the differences between a drill, table top exercise and a full-scale exercise. Provide an example for each.

1. Drills
2. Table top exercise
3. Full-scale exercise

Question 13:

Explain why the statements below are false.

1. A disaster-affected population is often too shocked and helpless to take responsibility for their own survival.
2. Disasters are random killers.
3. Locating disaster victims in temporary settlements is the best alternative.
4. Things are back to normal within a few weeks.

Congratulations, you have now completed the final examination paper.

Final examination answers

Question 1: Define any **four** of the following terms **and provide a descriptive example**.

(2 x 4 = 8 marks)

1. **Emergency:** A sudden state of danger needing immediate treatment that cannot be handled by routine measures, for example a fire breakout in an office. An emergency is an unplanned event that requires the immediate co-ordination of services to protect the health, safety or welfare of a community, or to limit damage to property or the environment.
2. **Disaster:** A sudden event that can be destructive and beyond the capacity of an organisation to address it without external help. A serious disruption of the functioning of society, causing widespread human, material or environmental losses which exceed the affected community's coping capacity.
3. **Humanitarian crisis:** A situation which results from a combination of the consequences of a hazard and the severely diminished coping capacity of a population and which will worsen without outside intervention. Characteristics of humanitarian crises generally can include starvation, malnutrition, disease, lack of shelter, lack of security and a growing number of victims.
4. **Complex emergency:** A humanitarian crisis in a country or region where there is a breakdown of authority resulting from internal and/or external conflict and which requires an international response that exceeds the capacity or mandate of any single agency.
5. **Refugee:** Someone who "owing to a well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion, is outside the country of his nationality, and is unable to, or owing to such fear, is unwilling to avail himself of the protection of that country".
6. **Internally displaced persons:** People who have been forcibly uprooted from their home because of fear for their lives or their freedoms, but who remain in their own country.

Question 2: Name and explain **three** characteristics of the disaster typology.

(6 x 1 = 6 marks)

Any of the following:

1. Location of the event to where people are living
2. Predictability of the event



3. Rate of onset or rapidity of occurrence
4. Intensity and magnitude of the event's impact
5. Duration that a community is affected
6. Frequency of and familiarity with the event
7. Controllability over the impacts of an event by an affected community.

Question 3: Name **three** reasons why disasters are increasing around the world?

(4 x 2 = 8 marks)

Any three of the following:

1. **Population growth and urbanisation:** As populations grow and urbanisation increases, people become more exposed to hazards. Events which in the past might have only impacted a small number of people may now become large-scale disasters affecting hundreds or thousands as people, many of whom live in areas which can be affected by hazards.
2. **Living in high-risk areas:** People most often live in areas which have ready access to the necessities of life, such as food and water but also access to trade and commerce. Because of this, many cities have been established by rivers, close to the sea, or in fertile farming valleys in mountainous areas. These locations often expose people to greater risks: rivers overflow, seas spawn hurricanes and tropical cyclones, and mountain slides devastate.
3. **Poverty:** People with limited incomes are generally compelled to live in less-costly but more dangerous locations such as in floodplains or on hillsides which may be prone to mudslides or collapse. In some developing countries, this is often compounded by inadequate building safety codes which might otherwise ensure that structures might be able to withstand disaster damage.
4. **Climate change:** Climate change is changing the environment in which people live. It has been predicted in the 21st century that floods and droughts will increase, sea levels will rise and cause flooding to millions of people being flooded, hurricane intensity will increase. Other projected effects of climate change include longer periods of cold weather and heat waves.
5. **Environmental degradation:** Human activity had degraded the natural environment, thereby increasing disaster risks. For example, building dams in earthquake zones can lead to flash floods; deforestation can lead to landslides.

Question 4: What is the difference between mitigation, preparedness and disaster management? Provide an example of each.

(3 x 3 = 9 marks)

1. **Mitigation** is the planning and implementation of strategies aimed at reducing the risks prior to, during and after the occurrence of a disaster. Mitigation strategy comprises of both short-term and long-term measures, for example, preventing or reducing risk to property or life by improving inherent capacities of people and strengthening habitats, infrastructure and critical facilities.
2. **Preparedness** means minimising the adverse effects of a hazard through precautionary actions and measures. It would entail a series of actions to ensure speedy, effective, efficient organisation and delivery of relief and responses following the onset of sudden disaster. Preparedness refers to building an emergency response capability before the disasters occur to facilitate effective and efficient response.
3. **Disaster management** is the process of forming common objectives and common values in order to encourage all stakeholders to plan for and deal with potential and actual disasters.

Disaster management implies the integration of all disaster-related activities in an organised and well-coordinated manner before, during and after the occurrence of a disaster, efficiently using valuable human and financial resources.

Question 5: Define and explain risk, hazard and vulnerability. Provide an example of each.

(3 x 3 = 9 marks)

1. **Risk:** Risk is a chance or likelihood of the occurrence of a hazard and exposure of human population and assets to such a hazard. Risks are quantifiable and measurable over a specified time period. Risks could be classified as health risks, safety or security risks, environmental risks, public welfare risks or financial risks.
2. **Hazard:** A hazard is an extreme event or a physical condition that has a potential to cause damage to life, property or environment. Hazards may be natural, human induced or economic. They may be internal or external (The students may give examples for each type).
3. **Vulnerability:** Vulnerability is the susceptibility of people, settlements, physical assets, resources and environment to the impact of hazards. Vulnerability would depend upon the exposure of any of the above to a hazard and its level of resilience to the impacts of the hazard (students should give examples for clarification).



Question 6: What does ICS stand for in the emergency response management? Name **four** components of ICS and explain the functions of each during an emergency.

(5 x 2 = 10 marks)

ICS stands for Incident Command System. The five sections of ICS are:

1. **Command:** Performs command activities.
2. **Planning section:** Responsible for collection, evaluation, dissemination and use of information about the incident, status of resources and creation of an incident action plan.
3. **Operation section:** Operation section is responsible for carrying out or implementing the incident action plan or emergency plan.
4. **Logistics section:** This section is responsible for providing facilities, services and materials including personnel to operate the requested equipment for incident.
5. **Finance section:** Finance administration is responsible for identifying incident costs and reimbursement accounting.

Question 7: What is an EOC and how is it different from ICS? Name and describe the main functions of an EOC.

(3 x 2 = 6 marks)

The Emergency Operations Centre (EOC) is a facility providing direction and co-ordination of emergency response and recovery efforts before, during, and after impending emergencies or disasters. The EOC may be co-located with an Emergency Co-ordination Centre which serves as the central emergency reporting and notification centre on a day-to-day (24/7) basis.

The EOC is where the Incident Command Team or other decision-making body is located. All pertinent decisions, communications, policies, and operational orders originate from the EOC.

The key functions of the EOC are:

1. Efficient mobilisation of personnel and resources.
2. Timely communication of information within and between local clusters or within organisations.
3. Timely communication with the public.
4. Resolution of conflicts over goals, tactics and resources.
5. Effective interaction with regional and national government units when needed.
6. Effective exercise of authority when needed.

Question 8: Why is it important to link disaster management and recovery to development? Name **three** ways this can be achieved.

(3 x 3 = 9 marks)

Disasters often reflect underlying vulnerabilities of communities and countries. Poverty, urbanisation, and environmental degradation are prevalent in many developing countries and exacerbate a population's vulnerability towards destruction. Additionally, the social, economic and physical infrastructure in developing countries is often not suited to withstand the unpredictable extremes of catastrophes. Disasters can be viewed as opportunities to address underlying vulnerabilities and build stronger and less risky communities. Recovery efforts are a means to implement pre-emptive disaster risk reduction tools in development efforts. Some ways to do this include:

1. **Maintain and, if possible, enhance people's quality of life** by ensuring that recovery efforts do more than return a community to its prior state. Disasters can provide opportunities to strengthen the infrastructure on which people depend, to build better schools and health facilities, and to improve housing and other living conditions.
2. **Enhance local economic vitality** by recognising that poor communities can neither prepare for nor effectively respond to disasters. Communities are also at greater risk when there is unlimited population growth, high consumption, or dependence on non-renewable resources. Recovery can provide opportunities to diversify economies and target the poor for income-generation activities.
3. **Use a consensus-building process when making decisions** to ensure the full range of community needs and priorities are identified and addressed. Particular attention should be given to those groups which are not part of the mainstream of society, for example, recent immigrants or the marginalised poor, and thus are frequently overlooked in planning and programming.
4. **Foster local resiliency to and responsibility for disasters** by strengthening local level capacities for disaster risk reduction, for example, the implementation of early warning systems and emergency preparedness activities such as stockpiling of emergency supplies. Local resiliency can also be fostered by promoting public awareness and understanding of local environmental hazards and risks, thereby also encouraging individual preparedness.
5. **Maintain and, if possible, promote mitigation and environmental quality** by prioritising natural resource management and implementing practices that control or reverse environmental degradation. For example, bulldozing steep hillsides for housing can destroy natural systems while also exposing people to natural hazards such as landslides. Incorporating urban planning and environmental management



into recovery plans can be an important step in reducing a population's vulnerability to future disasters.

6. **Ensure social and intergenerational equity** by not shifting the costs and hazards of unplanned development to the next generation. Intergenerational equality means that attention is given to preserving natural resources and ecosystems so that these are available to future stakeholders.

Question 9: You have been asked to conduct a relief assessment after a major earthquake in a developing country. Explain why each are important to assess after a disaster.

(4 x 2 = 8 marks)

Any four of the following:

1. **Water** is among the most critical needs for survival in the aftermath of major disasters. People affected by disasters are generally much more susceptible to illness and death from disease, in large part because of inadequate sanitation, inadequate water supplies and poor hygiene.
2. **Hygiene and sanitation** is usually one of the most serious concerns after a disaster. Disruptions in water supplies and sewage systems can pose serious health risks to victims because they decrease the amount and quality of available drinking water and create difficulties in waste disposal. Drinking water can be contaminated by breaks in sewage lines or the presence of animal cadavers in water sources.
3. **Food and nutrition** is an obvious need to ensure the basic sustenance of people and prevent the deterioration of the nutritional condition. Depending on the type of disaster, existing food stocks may be destroyed or disruptions to distribution systems may prevent the delivery of food.
4. **Health care** is critical to ensuring basic medical care and treatment, access to drugs and other essential supplies, and the control of communicable diseases. Emergencies may result not only in a loss of lives but an increased incidence of diseases such as diarrhoeal diseases (including cholera), acute respiratory infections (pneumonia), malnutrition and malaria.
5. **Protection** is essential to ensuring that the basic human rights of disaster-affected survivors, refugees and displaced persons are not violated. During emergencies – and especially civil conflicts where there is a breakdown of law and order – people may be at significant risk of human rights violations including sexual violence against women and girls, forcible conscription of young males at humanitarian sites, or attacks on displaced persons by armed groups.
6. **Education** assistance is often required to re-establish basic learning and development needs of children. Emergencies can severely curtail children's ability to access schools. When

populations are displaced especially, it is important to identify schooling as a priority in order that children's and youths' learning and development are not significantly disrupted.

7. **Psychosocial support** should be recognised as integral emergency response for children, adults and families. Although most people do not require formal mental health interventions, disasters do cause significant social, emotional and/or psychological disruptions. In cases where people are exposed to potentially traumatic events such as a life threat or witnessing the death of another, there may be cases of post-traumatic stress disorder, depression and other forms of mental distress.

Question 10: You have been appointed as the occupational health and safety representative for a major corporation. Suppose your company wanted to establish a mitigation programme. What are the **four** key strategies? List each strategy and provide at least **one** concrete example of mitigation activities for each strategy.

(4 x 2 = 8 marks)

Strategy 1 – Eliminate the hazard: Hard to do with natural hazards other than making sure that you do not locate near a known hazard and/or remove the hazard when possible. Strategies could involve not building in a flood plain (thus eliminating the risk of ravine flooding) or avoiding areas near hazardous waste disposal stations.

Strategy 2 – Reduce the risk: This means reducing the likelihood of an event taking place. Strategies could involve ensuring proper training in handling of hazardous materials/chemicals so as to reduce the risk of a hazardous material spill. Reducing the storage of flammable materials will reduce the risk of fire. Completing regular medical tests on pilots, transport drivers, engineers, and so on will reduce the risk of a major accident or a crash.

Strategy 3 – Reduce the consequences: Once the event has taken place, what can you do to reduce its impact? Writing and exercising a plan are two important strategies. Using earthquake mats for computers and storing extra food and water in the workplace are two ways of reducing the impact of earthquakes on materials and people. Flood-proofing your home reduces the impact of a flood and ensuring that your roof is well fastened to your home reduces the likelihood of severe wind damage.

Strategy 4 – Spread the risk: This involves purchasing insurance and mutual aid agreements for post-disaster response and recovery. A company that has both business interruption insurance as well as property coverage will be in better shape to recover from the earthquake than a company that has no insurance.



Question 11: Why are exercises important in emergency management? Identify at least **three** specific benefits of exercises.

(3 x 3 = 9 marks)

Well-designed and executed exercises are the most effective means of:

1. Training personnel and clarifying roles and responsibilities, as supported by plans and procedures.
2. Improving interagency coordination and communications.
3. Identifying gaps in resources and training, and identifying areas for improvement.
4. Improving individual and organisational performance through practice.
5. Demonstrating provincial, community, and organisational resolve to prepare for emergencies as part of due diligence.

Question 12: Explain the difference between a drill, table top exercise and a full- scale exercise. Provide an example for each.

(3 x 2 = 6 marks)

1. **Drills** are simple and used to test on specific type of activity. This activity could be to practice using a telephone tree, or to gather people together at meeting point.
2. **Table top exercises** are discussion based and are designed to be low stress and address policies, plans and procedures, as well as issues of jurisdiction, roles and responsibility and coordination.
3. **Full-scale exercise** is an extension of the functional exercise in that human resources and equipment are deployed to ensure an organisation's or community's capability is tested.

Question 13: Please explain why the statements below are false.

(4 x 1 = 4 marks)

1. **A disaster-affected population is often too shocked and helpless to take responsibility for their own survival.**

On the contrary, many find new strength during an emergency, as evidenced by the thousands of volunteers who spontaneously unite to sift through the rubble in search of victims after an earthquake.

2. **Disasters are random killers.**

Disasters strike hardest at the most vulnerable group, the poor, children and the elderly.

3. **Locating disaster victims in temporary settlements is the best alternative.**

It should be the last alternative. Many agencies use funds normally spent for tents to purchase building materials, tools and other construction-related support in the affected country.

4. **Things are back to normal within a few weeks.**

The effects of a disaster last a long time. Disaster-affected countries deplete much of their financial and material resources in the immediate post-impact phase. Successful relief programmes gear their operations to the fact that international interest wanes as needs and shortages become more pressing.