DISASTER MANAGEMENT (GR20D5153)

I-M.Tech – II Semester

(AY 2021-22)

Mr. K. Veera Babu

Assistant Professor

Department of Civil Engineering

Gokaraju Rangaraju Institute of Engineering and Technology

Bachupally, Kukatpally, Hyderabad – 500 090.

Gokaraju Rangaraju Institute of Engineering and Technology

Department of Civil Engineering

Disaster Management

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INSTITUTE OF ENGINEERING AND TECHNOLOGY
Department of Civil Engineering

DISASTER MANAGEMENT

Course **Code: GR20D5153** I Year II Semester

Unit 1: **Introduction:** Disaster: Definition, Factors and Significance; Difference Between Hazard And Disaster; Natural And Manmade Disasters: Difference, Nature, Types And Magnitude.

Unit 2: Repercussions of Disasters and Hazards: **Economic Damage**, Loss of Human And Animal Life, Destruction Of Ecosystem. **Natural Disasters**: Earthquakes, Volcanisms, Cyclones, Tsunamis, Floods, Droughts and Famines, Landslides and Avalanches, Man-made disaster: Nuclear Reactor Meltdown, Industrial Accidents, Oil Slicks and Spills, Outbreaks Of Disease And Epidemics, War And Conflicts.

Unit 3: Disaster Prone Areas in India: Study of Seismic Zones; Areas Prone To Floods And Droughts, Landslides and Avalanches; Areas Prone To Cyclonic And Coastal Hazards With Special Reference To Tsunami; Post-Disaster Diseases And Epidemics

Unit 4: Disaster Preparedness and Management: Preparedness: Monitoring Of Phenomena Triggering A Disaster Or Hazard; Evaluation Of Risk: Application Of Remote Sensing, Data From Meteorological And Other Agencies, Media Reports: Governmental AndCommunity Preparedness.

Unit 5: Risk Assessment: Disaster Risk: Concept and Elements, Disaster Risk Reduction, Global and National Disaster Risk Situation. Techniques of Risk Assessment, Global Co- Operation in Risk Assessment and Warning, People's Participation in RiskAssessment. Strategies for Survival. Concept and Strategies of Disaster Mitigation, Emerging Trendsin Mitigation. Structural Mitigation and Non-Structural Mitigation, Programs of Disaster Mitigation in India.

References:

1. R. Nishith, Singh AK, "Disaster Management in India: Perspectives, issues and strategies "'New Royal bookCompany
2. Sahni, Pardeep Et.Al. (Eds.)," Disaster Mitigation Experiences And Reflections", Prentice Hall Of India, NewDelhi.
3. Goel S. L. , Disaster Administration And Management Text And Case Studies" ,Deep &Deep Publication Pvt. Ltd., NewDelhi.

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DEPARTMENT OF CIVIL ENGINEERING

TIME TABLE

I YEAR II SEMESTER

I M.Tech (GR20) - II Semester **AY: 2021-22**

DAY/ HOUR	9:00-10:00	10:00-11:00	11:00-12:00	12:00-01:00	01:00-02:00	02:00-03:00	03:00-04:00
Monday				**LUNCH BREAK**			
Tuesday							
Wednesday	DM						
Thursday							
Friday			DM				
Saturday							

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Program Educational Objectives(PEO's)

PEO1: Graduates of the program will equip with professional expertise on the theories, process, methods and techniques for building high-quality structures in a cost-effective manner.

PEO2: Graduates of the program will be able to design structural components using contemporary softwares and professional tools with quality practices of international standards

PEO3: Graduates of the program will be effective as both an individual contributor and a member of a development team with professional, ethical and social responsibilities.

PEO4: Graduates of the program will grow professionally through continuing education, training, research, and adapting to the rapidly changing technological trends globally in structural Engineering

Program Outcomes(PO's):

PO 1: An ability to independently carry out research /investigation and development to solve practical problems.

PO 2: An ability to write and present a substantial technical report/document.

PO 3: Students should be able to demonstrate a degree of mastery over the area as per the specialization of the program. The mastery should be at a level higher than the requirements in the appropriate bachelors.

PO 4: Possess critical thinking skills and solve core, complex and multidisciplinary structural engineering problems.

PO 5: Assess the impact of professional engineering solutions in an environmental context along with societal, health, safety, legal, ethical and cultural issues and the need for sustainable development.

PO 6: Recognize the need for life-long learning to improve knowledge and competence.

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COURSE OBJECTIVES

Academic **Y**ear : 2021-22

Semester : II

Name of the Program: M.Tech Structural Engineering Year: I Section: A

Course/Subject: Disaster Management Course Code: GR20D5153

Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

On completion of this Subject/Course the student shall be able to:

S.No	Objectives
1	Learn to demonstrate a critical understanding of key concepts in disaster risk reduction and humanitarian response.
2	Critically evaluate disaster risk reduction and humanitarian response policy and practice from multiple perspectives.
3	Develop an understanding of standards of humanitarian response and practical relevance in specific types of disasters and conflict situations.
4	Critically understand the strengths and weaknesses of disaster management approaches
5	Planning and programming in different countries, particularly their home country or the countries they work in.

Signature of HOD Signature of faculty

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COURSE OUTCOMES

Academic **Y**ear : 2021-22

Semester : II

Name of the Program: M.Tech Structural Engineering Year: I Section: A

Course/Subject: Disaster Management Course Code: GR20D5153

Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

The expected outcomes of the Course/Subject are: At the end of the course, the student will be able to

S.No	Outcomes
1	Capacity to integrate knowledge and to analyze, evaluate and manage the different public health aspects of disaster events at a local and global levels, even when limited information is available.
2	Capacity to describe, analyze and evaluate the environmental, social, cultural, economic, legal and organizational aspects influencing vulnerabilities and capacities to face disasters.
3	Capacity to work theoretically and practically in the processes of disaster management (disaster risk reduction, response, and recovery) and relate their interconnections, particularly in the field of the Public Health aspects of the disasters.
4	Capacity to manage the Public Health aspects of the disasters.
5	Capacity to obtain, analyze, and communicate information on risks, relief needs and lessons learned from earlier disasters in order to formulate strategies for mitigation in future scenarios with the ability to clearly present and discuss their conclusions and the knowledge and arguments behind them

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STUDENT ROLL LIST

M.Tech Structural Engg. I Year-II Sem- Section A(GR20) 2021-22

S.No	Reg No	Student Name
1	21241D2001	ATKAPURAM PRASHANTH
2	21241D2002	BANDI SRI RAM GOPAL
3	21241D2003	CHALLA MADHAVI
4	21241D2004	PAMMI DIVYA
5	21241D2005	DUMMA UMESH KUMAR
6	21241D2006	K LATHASREE
7	21241D2007	MARIYALA VAISHNAVI
8	21241D2008	MAVOORI PRANAV
9	21241D2009	MITTAPALLI NAGA ASHWINI
10	21241D2010	RAVULA VENKATA SURAJ REDDY
11	21241D2011	REPATI MOHAN BABU
12	21241D2012	CHERUKU SANDHYA
13	21241D2013	SHAIK FEROZ
14	21241D2014	S K SAI CHANDRA
15	21241D2015	THOTA HARSHAVARDHAN
16	21241D2016	VARIKUPPULA LALITHA
17	21241D2017	YAMBA RAMA GNANENDRA SAI
18	21241D2018	YENUMALA DEVESH GOUD
19	21241D2019	S PRASHANTH KUMAR
20	21241D2020	BAVANDLAPELLI THARUNTEJA
21	21241D2021	G NITISH KUMAR

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GUIDELINES TO STUDY THE COURSE/SUBJECT

Academic **Y**ear : 2021-22

Semester : II

Name of the Program: M.Tech Structural Engineering Year: I Section: A

Course/Subject: Disaster Management Course Code: GR20D5153

Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

Guidelines to students

Guidelines to study the Course: Disaster Management

The course helps the students to learn and understand the importance of Disaster Management. One can learn the various phases of disaster. This course makes the students to understand about the types of disaster, phases of disaster, Risk Assessment and Disaster Mitigation Strategies.

Where will this subject help?

- Useful in the different Disaster occurring situations.
- This course let the students get know the different phases of disaster
- This course let the students to how to respond to different disaster situation

Books / Material

1. R. Nishith, Singh AK, "Disaster Management in India: Perspectives, issues and strategies "'New Royal bookCompany

REFERENCES

1. Sahni, Pardeep Et.Al. (Eds.)," Disaster Mitigation Experiences And Reflections", Prentice Hall Of India, NewDelhi.
2. Goel S. L. , Disaster Administration And Management Text And Case Studies" ,Deep &Deep Publication Pvt. Ltd., NewDelhi.

Websites:

www.nptel.ac.in/courses/civilengineering/disastermanagement/1051030153/
www.google.co.in

Course Design and Delivery System (CDD):

- The Course syllabus is written into number of learning objectives and outcomes.
- These learning objectives and outcomes will be achieved through lectures, assessments, assignments, etc.
- Every student will be given an assessment plan, criteria for assessment, scheme of evaluation and grading method.
- The Learning Process will be carried out through assessments of Knowledge, Skills and Attitude by various methods and the students will be given guidance to refer to the text books, reference books, journals, etc.

The faculty be able to –

- Understand the principles of Learning
- Understand the psychology of students
- Develop instructional objectives for a given topic
- Prepare course, unit and lesson plans
- Understand different methods of teaching and learning
- Use appropriate teaching and learning aids
- Plan and deliver lectures effectively
- Provide feedback to students using various methods of Assessments and tools of Evaluation
- Act as a guide, advisor, counselor, facilitator, motivator and not just as a teacher alone

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COURSE SCHEDULE

Academic **Y**ear : 2021-22

Semester : II

Name of the Program: M.Tech Structural Engineering Year: I Section: A

Course/Subject: Disaster Management Course Code: GR20D5153

Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

The Schedule for the whole Course / Subject is:

S. No.	Description	Duration (Date)		Total No. Of Periods
		From	To	
1.	**UNIT I:** Introduction	13-04-2022	29-04-2022	6
2.	**UNIT II:** Repercussions of Disasters and Hazards	04-05-2022	27-05-2022	8
3.	**UNIT III:** Disaster Prone Areas in India	01-06-2022	29-06-2022	7
4.	**UNIT IV:** Disaster Preparedness and Management	01-07-2022	22-07-2022	7
5.	**UNIT V:** Risk Assessment	27-07-2022	12-08-2022	6

Total No. of Instructional periods available for the course: 34 Hours / Periods

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SCHEDULE OF INSTRUCTIONS
COURSE PLAN

Academic **Y**ear : 2021-22

Semester : II

Name of the Program: M.Tech Structural Engineering Year: I Section: A

Course/Subject: Disaster Management Course Code: GR20D5153

Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

S.No.	Date	Unit No.	Session Duration	Topics
1	13-04-2022	I	1	Introduction to Disaster Management
2	20-04-2022	I	1	Significance and Factors affecting
3	22-04-2022	I	1	Difference b/w Hazard and Disaster
4	26-04-2022	I	1	Types of Hazards
5	27-04-2022	I	1	Types of Disasters
6	29-04-2022	I	1	Major Disasters occurred in India
7	04-05-2022	II	1	Repercussions of Disasters and Hazards
8	06-05-2022	II	1	Economic Damage-Human lose
9	11-05-2022	II	1	Natural Disasters-Earthquakes
10	13-05-2022	II	1	Volcanisms, Cyclones, Tsunamis
11	18-05-2022	II	1	Floods, Droughts and Famines
12	20-05-2022	II	1	Land Slides, Avalanches, Nuclear Reactor Meltdown
13	25-05-2022	II	1	Industrial Accidents

14	27-05-2022	II	1	Outbreak of Disease and Epidemics
15	01-06-2022	III	1	Disaster Prone Areas in India- Seismic Zones
16	03-06-2022	III	1	Areas prone to Floods and Drought
17	15-06-2022	III	1	Areas prone to Avalanches,
18	17-06-2022	III	1	Areas prone to Land Slide ,Cyclonic
19	22-06-2022	III	1	Areas prone to Costal Hazards with Special reference to Tsunami
20	24-06-2022	III	1	Post Disaster Diseases and Epidemics
21	29-06-2022	III	1	Post Disaster Diseases and Epidemics
22	01-07-2022	IV	1	Disaster Preparedness and Management
23	06-07-2022	IV	1	Monitoring a Disaster and Hazard
24	08-07-2022	IV	1	Phases of Disaster
25	13-07-2022	IV	1	Evaluation of Risk
26	15-07-2022	IV	1	Application of Remote Sensing
27	20-07-2022	IV	1	Date from IMD and other Agencies
28	22-07-2022	IV	1	Government and Community Preparedness
29	27-07-2022	V	1	Risk Assessment-Disaster Risk
30	29-07-2022	V	1	Techniques of Risk Assessment
31	03-08-2022	V	1	Global Co-operation
32	05-08-2022	V	1	People's Participation in Risk Assessment
33	10-08-2022	V	1	Strategies for Disaster Mitigation
34	12-08-2022	V	1	Programs of Disaster Mitigation in India

Note: 1. Ensure that all topics specified in the course are mentioned.
2. Additional topics covered, if any, may also be specified in bold
3. Mention the corresponding course objective and out come numbers against each topic.

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SCHEDULE OF INSTRUCTIONS
UNIT PLAN

Academic **Y**ear : 2021-22

Semester : II

Name of the Program: M.Tech Structural Engineering Year: I Section: A

Course/Subject: Disaster Management Course Code: GR20D5153

Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

UNIT I

Lesson No.	Unit No.	Date	No. of Periods	Topics	Course Objectives & Outcomes	References Text Book Page No.
1	I	13-04-2022	1	Introduction to Disaster Management	COb-1 & CO-1	R. Nishith, Singh AK, "Disaster Management in India: Perspectives, issues and strategies
2		20-04-2022	1	Significance and Factors affecting	COb-1 & CO-1	
3		22-04-2022	1	Difference b/w Hazard and Disaster	COb-1 & CO-1	
4		26-04-2022	1	Types of Hazards	COb-1 & CO-1	
5		27-04-2022	1	Types of Disasters	COb-1 & CO-1	
6		29-04-2022	1	Major Disasters occurred in India	COb-1 & CO-1	

UNIT II

Lesson No.	Unit No.	Date	No. of Periods	Topics	Course Objectives & Outcomes	References Text Book
1	II	04-05-2022	1	Repercussions of Disasters and Hazards	COb-2 CO-2	R. Nishith, Singh AK, "Disaster Management in India: Perspectives, issues and strategies
2		06-05-2022	1	Economic Damage- Human lose	COb-2 CO-2	
3		11-05-2022	1	Natural Disasters- Earthquakes	COb-2 CO-2	
4		13-05-2022	1	Volcanisms, Cyclones, Tsunamis	COb-2 CO-2	
5		18-05-2022	1	Floods, Droughts and Famines	COb-2 CO-2	
6		20-05-2022	1	Land Slides, Avalanches, Nuclear Reactor Meltdown	COb-2 CO-2	
7		25-05-2022	1	Industrial Accidents	COb-2 CO-2	
8		27-05-2022	1	Outbreak of Disease and Epidemics	COb-2 CO-2	

UNIT III

Lesson No.	Unit No.	Date	No. of Periods	Topics	Course Objectives & Outcomes	References Text Book
1	III	01-06-2022	1	Disaster Prone Areas in India- Seismic Zones	COb-3 CO-3	R. Nishith, Singh AK, "Disaster Management in India: Perspectives, issues and strategies

2		03-06-2022	1	Areas prone to Floods and Drought	COb-3 CO-3	
3		15-06-2022	1	Areas prone to Avalanches,	COb-3 CO-3	
4		17-06-2022	1	Areas prone to Land Slide ,Cyclonic	COb-3 CO-3	
5		22-06-2022	1	Areas prone to Costal Hazards with Special reference to Tsunami	COb-3 CO-3	
6		24-06-2022	1	Post Disaster Diseases and Epidemics	COb-3 CO-3	
7		29-06-2022	1	Post Disaster Diseases and Epidemics	COb-3 CO-3	

UNIT IV

Lesson No.	Unit No.	Date	No. of Periods	Topics	Course Objectives & Outcomes	References Text Book
1	IV	01-07-2022	1	Disaster Preparedness and Management	COb-4 & CO-4	R. Nishith, Singh AK, "Disaster Management in India: Perspectives, issues and strategies
2		06-07-2022	1	Monitoring a Disaster and Hazard	COb-4 & CO-4	
3		08-07-2022	1	Phases of Disaster	COb-4 & CO-4	
4		13-07-2022	1	Evaluation of Risk	COb-4 & CO-4	
5		15-07-2022	1	Application of Remote Sensing	COb-4 & CO-4	

6		20-07-2022	1	Date from IMD and other Agencies	COb-4 & CO-4	
7		22-07-2022	1	Government and Community Preparedness	COb-4 & CO-4	

UNIT V

Lesson No.	Unit No.	Date	No. of Periods	Topics	Course Objectives & Outcomes	References Text Book
1	V	27-07-2022	1	Risk Assessment- Disaster Risk	COb-5 CO-5	R. Nishith, Singh AK, "Disaster Management in India: Perspectives, issues andstrategies
2		29-07-2022	1	Techniques of Risk Assessment	COb-5 CO-5	
3		03-08-2022	1	Global Co-operation	COb-5 CO-5	
4		05-08-2022	1	People's Participation in Risk Assessment	COb-5 CO-5	
5		10-08-2022	1	Strategies for Disaster Mitigation	COb-5 CO-5	
6		12-08-2022	1	Programs of Disaster Mitigation in India	COb-5 CO-5	

Signature of HOD

Signature of faculty

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LESSON PLAN

Academic **Y**ear : 2021-22

Semester : II

Name of the Program: M.Tech Structural Engineering Year: I Section: A

Course/Subject: Disaster Management Course Code: GR20D5153

Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

Lesson No: 1 Duration of Lesson: 1hr

Lesson Title: Introduction about disaster management

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1.Understand the concepts of DM.

TEACHING AIDS : white board, Different colour markers
TEACHING POINTS :

- Overall view about Disaster Management like types, mitigation etc.

Assignment / Questions: (1 & 1) 1. What is basic concept of DM?
(1 & 1) 2. Explain about different types of Disasters.

Signature of faculty

Note: Mention for each question the relevant Objectives and Outcomes Nos.

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LESSON PLAN

Academic **Y**ear : 2021-22

Semester : II

Name of the Program: M.Tech Structural Engineering Year: I Section: A

Course/Subject: Disaster Management Course Code: GR20D5153

Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

Lesson No: 2 Duration of Lesson: 1hr

Lesson Title: Definition, factors and significance

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1. Understand about disaster and Hazards
2. Understand the factors and significance of Disaster management

TEACHING AIDS : white board, Different colour markers
TEACHING POINTS :

- Explain the definition of disaster
- List out factors affecting the disaster management.
- Explains the significance of disaster management.

Assignment / Questions: (1 & 1) 1.Define disaster and hazard. (1 & 1)
2. List out factors affecting the disaster management. (1 & 1)

Signature of faculty

Note: Mention for each question the relevant Objectives and Outcomes Nos

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LESSON PLAN

Academic **Y**ear : 2021-22

Semester : II

Name of the Program: M.Tech Structural Engineering Year: I Section: A

Course/Subject: Disaster Management Course Code: GR20D5153

Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

Lesson No: 3 Duration of Lesson: 1hr

Lesson Title: Difference b/w Hazard and Disaster

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1. Understand the difference between natural and Manmade disasters.
2. Understand the effects of natural and Manmade disasters

TEACHING AIDS : white board, Different colour markers
TEACHING POINTS :

- Discussed on different types of Natural and Manmade disasters.
- Discussed about effect of various disasters.

Assignment / Questions: (1 & 1) 1. What are the different natural disasters?
(1 & 1) 2. Explain in detail the effects of various disaters.

Signature of faculty

Note: Mention for each question the relevant Objectives and Outcomes Nos

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LESSON PLAN

Academic **Y**ear : 2021-22

Semester : II

Name of the Program: M.Tech Structural Engineering Year: I Section: A

Course/Subject: Disaster Management Course Code: GR20D5153

Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

Lesson No: 4 Duration of Lesson: 1hr

Lesson Title: Types of Hazards

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1. Understand the nature of disasters.
2. Understand the magnitude of disasters.

TEACHING AIDS : white board, Different colour markers
TEACHING POINTS :

- Nature of disasters
- Magnitude of disasters

Assignment / Questions: (1 & 1) 1. Explain the nature of various disasters.
(1 & 1) 2.Explain the impact of magnitude of disasters on the public.

Signature of faculty

Note: Mention for each question the relevant Objectives and Outcomes Nos.

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LESSON PLAN

Academic **Y**ear : 2021-22

Semester : II

Name of the Program: M.Tech Structural Engineering Year: I Section: A

Course/Subject: Disaster Management Course Code: GR20D5153

Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

Lesson No: 5 Duration of Lesson: 1hr

Lesson Title: Types of Disasters

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1. Explain about types of disasters?

.

TEACHING AIDS : white board, Different colour markers
TEACHING POINTS :

- Nature of disasters
- Magnitude of disasters
- Types of Disasters

1. Assignment / Questions: (1 & 1) Explain about types of disasters?

Signature of faculty

Note: Mention for each question the relevant Objectives and Outcomes Nos.

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LESSON PLAN

Academic **Y**ear : 2021-22

Semester : II

Name of the Program: M.Tech Structural Engineering Year: I Section: A

Course/Subject: Disaster Management Course Code: GR20D5153

Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

Lesson No: 6 Duration of Lesson: 1hr

Lesson Title: Major Disasters occurred in India

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1. Explain about Major Disasters occurred in India .

TEACHING AIDS : white board, Different colour markers
TEACHING POINTS :

- Nature of disasters
- Major Disasters occurred in India

Assignment / Questions: (1 & 1) 1. Explain about Major Disasters occurred in India .

Signature of faculty

Note: Mention for each question the relevant Objectives and Outcomes Nos.

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LESSON PLAN

Academic **Y**ear : 2021-22

Semester : II

Name of the Program: M.Tech Structural Engineering Year: I Section: A

Course/Subject: Disaster Management Course Code: GR20D5153

Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

Lesson No: 7 Duration of Lesson: 1hr
Lesson Title: Repercussions of Disasters and Hazards

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1.Impact of disasters and hazards on human and animal life.

TEACHING AIDS : white board, Different colour markers
TEACHING POINTS :

- Impact of disasters and hazards on human and animal life.

Assignment / Questions: (2&2) 1. Discuss about loss of human life and animal life due to disasters and hazards.

Signature of faculty

Note: Mention for each question the relevant Objectives and Outcomes Nos.

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Bachupally, Kukatpally, Hyderabad – 500 090. (040) 6686 4440

LESSON PLAN

Academic **Y**ear : 2021-22

Semester : II

Name of the Program: M.Tech Structural Engineering Year: I Section: A

Course/Subject: Disaster Management Course Code: GR20D5153

Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

Lesson No: 8 Duration of Lesson: 1hr
Lesson Title: Economic Damage-Human lose

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1.Impact of disasters and hazards on human and animal life.

TEACHING AIDS : white board, Different colour markers
TEACHING POINTS :

- Impact of disasters and hazards on human and animal life.

Assignment / Questions: (2&2) 1. Discuss about loss of human life and animal life due to disasters and hazards.

Signature of faculty

Note: Mention for each question the relevant Objectives and Outcomes Nos.

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LESSON PLAN

Academic **Y**ear : 2021-22

Semester : II

Name of the Program: M.Tech Structural Engineering Year: I Section: A

Course/Subject: Disaster Management Course Code: GR20D5153

Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

Lesson No: 9 Duration of Lesson: 1hr
Lesson Title: Natural Disasters-Earthquakes

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1. Understand about destruction of ecosystem
2. Explain about Earthquakes?

TEACHING AIDS : white board, Different colour markers
TEACHING POINTS :

- Destruction of ecosystem.
- Earthquakes

Assignment / Questions: (2&2) 1. Discuss about destruction of ecosystem.

Signature of faculty

Note: Mention for each question the relevant Objectives and Outcomes Nos.

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Academic **Y**ear : 2021-22

Semester : II

Name of the Program: M.Tech Structural Engineering Year: I Section: A

Course/Subject: Disaster Management Course Code: GR20D5153

Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

Lesson No: 10 Duration of Lesson: 1hr
Lesson Title: Impact of earthquakes and volcanoes Cyclones, Tsunamis

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1.Understand the repercussions of earthquakes and volcanoes

TEACHING AIDS : white board, Different colour markers
TEACHING POINTS

- Repercussions of earthquake and volcanoes
- Tsunamis

Assignment / Questions: (2&2) 1. Discuss about repercussions of earthquakes and volcanoes.

Signature of faculty

Note: Mention for each question the relevant Objectives and Outcomes Nos.

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Academic **Y**ear : 2021-22

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Course/Subject: Disaster Management Course Code: GR20D5153

Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

Lesson No: 11 Duration of Lesson: 1hr

Lesson Title: Floods, Droughts and Famines

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1.Understand the repercussions of Floods, Droughts and Famines

TEACHING AIDS : white board, Different colour markers
TEACHING POINTS :

- Effect of cyclones, tsunamis and floods

Assignment / Questions: (2&2) 1. Discuss the repercussions of Floods, Droughts and Famines

Signature of faculty

Note: Mention for each question the relevant Objectives and Outcomes Nos.

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Academic **Y**ear : 2021-22

Semester : II

Name of the Program: M.Tech Structural Engineering Year: I Section: A

Course/Subject: Disaster Management Course Code: GR20D5153

Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

Lesson No: 12 Duration of Lesson: 1hr

Lesson Title: Land Slides, Avalanches, Nuclear Reactor Meltdown.

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1.Impact of droughts and Famines, Landslides and avalanches

TEACHING POINTS :

- Impact of droughts and Famines, Landslides and avalanches

Assignment / Questions: (2&2) 1. Discuss the repercussions of Droughts and Famines, Landslides and avalanches.

Signature of faculty

Note: Mention for each question the relevant Objectives and Outcomes Nos.

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Course/Subject: Disaster Management Course Code: GR20D5153

Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

Lesson No: 13 Duration of Lesson: 1hr
Lesson Title: Impact of nuclear reactor meltdown, industrial accidents, oil slicks and spills

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1.Understand the repercussions due to nuclear reactor meltdown, industrial accidents, oil slicks and spills

TEACHING AIDS : white board, Different colour markers
TEACHING POINTS :

- Repercussions due to nuclear reactor meltdown, industrial accidents, oil slicks and spills

- Assignment / Questions: (2&2) 1. Discuss about Repercussions due to nuclear reactor meltdown, industrial accidents, oil slicks and spills

Signature of faculty

Note: Mention for each question the relevant Objectives and Outcomes Nos.

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Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

Lesson No: 14 Duration of Lesson: 1hr

Lesson Title: Outbreaks of diseases and epidemics

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1.Understand the repercussions due to Outbreaks of diseases and epidemics, war and conflicts.

TEACHING AIDS : white board, Different colour markers
TEACHING POINTS :

- Repercussions due to Outbreaks of diseases and epidemics, war and conflicts

Assignment / Questions: (2&2) 1. Discuss about Repercussions due to Outbreaks of diseases and epidemics, war and conflicts

Signature of faculty

Note: Mention for each question the relevant Objectives and Outcomes Nos.

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Academic **Y**ear : 2021-22

Semester : II

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Course/Subject: Disaster Management Course Code: GR20D5153

Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

Lesson No: 15 Duration of Lesson: 1hr
Lesson Title: Disaster prone areas in India& Seismic Zone

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1.Areas in India which are prone to disaster.

TEACHING AIDS : white board, Different colour markers
TEACHING POINTS :

- Disaster prone area in India

Assignment / Questions: (3&3) 1. List the areas in India which prone to disaster.

Signature of faculty

Note: Mention for each question the relevant Objectives and Outcomes Nos.

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LESSON PLAN

Academic **Y**ear : 2021-22

Semester : II

Name of the Program: M.Tech Structural Engineering Year: I Section: A

Course/Subject: Disaster Management Course Code: GR20D5153

Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

Lesson No: 16 Duration of Lesson: 1hr
Lesson Title: Areas prone to Floods and Drought

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:
1.Know the seismic zones in India and their importance

TEACHING AIDS : white board, Different colour markers
TEACHING POINTS :

- Seismic zones in India
- Floods
- Droughts

Assignment / Questions: (3 &3) 1. Discuss about seismic zones and their importance.

Signature of faculty

Note: Mention for each question the relevant Objectives and Outcomes Nos.

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Academic **Y**ear : 2021-22

Semester : II

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Course/Subject: Disaster Management Course Code: GR20D5153

Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

Lesson No: 17 Duration of Lesson: 1hr

Lesson Title: Areas prone to Avalanches

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1. Know the areas prone to Landslides and Avalanches in India.

TEACHING AIDS : white board, Different colour markers

TEACHING POINTS :

- areas prone to Landslides and Avalanches in India.
- Cyclonic

Assignment / Questions: (3&3) 1. Discuss about areas prone to Landslides and Avalanches in India.

Signature of faculty

Note: Mention for each question the relevant Objectives and Outcomes Nos.

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Course/Subject: Disaster Management Course Code: GR20D5153

Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

Lesson No: 18 Duration of Lesson: 1hr

Lesson Title: Areas prone to Land Slide ,Cyclonic

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1. Know the areas prone to Landslides and Avalanches in India.

TEACHING AIDS : white board, Different colour markers

TEACHING POINTS :

- areas prone to Landslides and Avalanches in India.
- Cyclonic

Assignment / Questions: (3&3) 1. Discuss about areas prone to Landslides and Avalanches in India.

Signature of faculty

Note: Mention for each question the relevant Objectives and Outcomes Nos.

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Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

Lesson No: 19 Duration of Lesson: 1hr

Lesson Title: Areas prone to Costal Hazards with Special reference to Tsunami

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1. Know the areas prone to Landslides and Avalanches in India.

TEACHING AIDS : white board, Different colour markers

TEACHING POINTS :

- areas prone to Landslides and Avalanches in India.
- Cyclonic

Assignment / Questions: (3&3) 1. Discuss about areas prone to Landslides and Avalanches in India.

Signature of faculty

Note: Mention for each question the relevant Objectives and Outcomes Nos.

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Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

Lesson No: 20 Duration of Lesson: 1hr

Lesson Title: Post disaster diseases and epidemics

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1. Understand about the post disaster diseases and epidemics

TEACHING AIDS : white board, Different colour markers
TEACHING POINTS :

- post disaster diseases and epidemics

Assignment / Questions: (3&3) 1. Explain about post disaster diseases and epidemics

Signature of faculty

Note: Mention for each question the relevant Objectives and Outcomes Nos.

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Name of the Program: M.Tech Structural Engineering Year: I Section: A

Course/Subject: Disaster Management Course Code: GR20D5153

Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

Lesson No: 21 Duration of Lesson: 1hr
Lesson Title: Post disaster diseases and epidemics

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

2. Understand about the post disaster diseases and epidemics

TEACHING AIDS : white board, Different colour markers
TEACHING POINTS :

- post disaster diseases and epidemics

Assignment / Questions: (3&3) 1. Explain about post disaster diseases and epidemics

Signature of faculty

Note: Mention for each question the relevant Objectives and Outcomes Nos.

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Course/Subject: Disaster Management Course Code: GR20D5153

Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

Lesson No: 22 Duration of Lesson: 1hr

Lesson Title: Disaster preparedness and management-Introduction

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1. Understand Disaster preparedness and management

TEACHING AIDS : white board, Different colour markers
TEACHING POINTS :

- Disaster preparedness and management

Questions: (4&4) 1. Discuss briefly about Disaster preparedness and management

Signature of faculty

Note: Mention for each question the relevant Objectives and Outcomes Nos.

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LESSON PLAN

Academic **Y**ear : 2021-22

Semester : II

Name of the Program: M.Tech Structural Engineering Year: I Section: A

Course/Subject: Disaster Management Course Code: GR20D5153

Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

Lesson No: 23 Duration of Lesson: 1hr

Lesson Title: Monitoring a Disaster and Hazard

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1. Understand the monitoring of phenomena triggering a disaster or hazard.

TEACHING AIDS : white board, Different colour markers
TEACHING POINTS :

monitoring of phenomena triggering a disaster or hazard.

Assignment / Questions: (4&4) 1. Explain about monitoring of phenomena triggering a disaster or hazard.

Signature of faculty

Note: Mention for each question the relevant Objectives and Outcomes Nos.

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LESSON PLAN

Academic **Y**ear : 2021-22

Semester : II

Name of the Program: M.Tech Structural Engineering Year: I Section: A

Course/Subject: Disaster Management Course Code: GR20D5153

Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

Lesson No: 24 Duration of Lesson: 1hr

Lesson Title: Phases of Disaster

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1. Explain Phases of Disaste?

TEACHING AIDS : white board, Different colour markers
TEACHING POINTS :

monitoring of phenomena triggering a disaster or hazard. Phases

Assignment / Questions: (4&4) 1. Explain phases of disaster?

Signature of faculty

Note: Mention for each question the relevant Objectives and Outcomes Nos.

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Academic **Y**ear : 2021-22

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Course/Subject: Disaster Management Course Code: GR20D5153

Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

Lesson No: 25 Duration of Lesson: 1hr

Lesson Title: Evaluation of Risk

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1. Understand about the evaluation of risk ?

TEACHING AIDS : white board, Different colour markers
TEACHING POINTS :

- Evaluation of risk

Assignment / Questions: (4&4) 1. Discuss about evaluation of Risk.

Signature of faculty

Note: Mention for each question the relevant Objectives and Outcomes Nos.

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LESSON PLAN

Academic **Y**ear : 2021-22

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Course/Subject: Disaster Management Course Code: GR20D5153

Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

Lesson No: 26 Duration of Lesson: 1hr

Lesson Title: Application of Remote Sensing

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1. Explain application of remote sensing in disaster risk analyasis?

TEACHING AIDS : white board, Different colour markers
TEACHING POINTS :

- Evaluation of risk and application of Remote sensing

Assignment / Questions: (4&4) 1. Explain about application of Remote sensing.

Signature of faculty

Note: Mention for each question the relevant Objectives and Outcomes Nos.

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Academic **Y**ear : 2021-22

Semester : II

Name of the Program: M.Tech Structural Engineering Year: I Section: A

Course/Subject: Disaster Management Course Code: GR20D5153

Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

Lesson No: 27 Duration of Lesson: 1hr

Lesson Title: Data from meteorological and other agencies, Media reports.

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1. Understand theimportance of data from meteorological and other agencies.
2. Understand the importance of data from media reports.

TEACHING AIDS : white board, Different colour markers

TEACHING POINTS :

- Data from meteorological and other agencies, Media reports.

Assignment / Questions:(4&4) 1. Explain the importance of Data from meteorological and other agencies in management of disasters.
(4 & 4) 2. Explain the use of media reports in the management of disasters.

Signature of faculty

Note: Mention for each question the relevant Objectives and Outcomes Nos.

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LESSON PLAN

Academic **Y**ear : 2021-22

Semester : II

Name of the Program: M.Tech Structural Engineering Year: I Section: A

Course/Subject: Disaster Management Course Code: GR20D5153

Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

Lesson No: 28 Duration of Lesson: 1hr

Lesson Title: Government and Community Preparedness

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1. Understand the importance of governmental and community preparedness in managing the disasters.

TEACHING AIDS : white board, Different colour markers

TEACHING POINTS :

- Governmental and community preparedness

Assignment / Questions: (4&4) 1. Explain the role of government and community in the management of disasters.

Signature of faculty

Note: Mention for each question the relevant Objectives and Outcomes Nos.

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LESSON PLAN

Academic **Y**ear : 2021-22

Semester : II

Name of the Program: M.Tech Structural Engineering Year: I Section: A

Course/Subject: Disaster Management Course Code: GR20D5153

Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

Lesson No: 29 Duration of Lesson: 1hr

Lesson Title: Risk Assessment-Disaster Risk

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1. Understand the different ways of Risk assessment.

TEACHING AIDS : white board, Different colour markers
TEACHING POINTS :

- Discussed the Risk assessment systems.

Assignment / Questions: (5&5)Discuss about Risk assessment.

Signature of faculty

Note: Mention for each question the relevant Objectives and Outcomes Nos.

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LESSON PLAN

Academic **Y**ear : 2021-22

Semester : II

Name of the Program: M.Tech Structural Engineering Year: I Section: A

Course/Subject: Disaster Management Course Code: GR20D5153

Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

Lesson No: 30 Duration of Lesson: 1hr

Lesson Title: Techniques of Risk Assessment

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1. Understand the concepts of disaster risk and Techniques of Risk Assessment

TEACHING AIDS : white board, Different colour markers

TEACHING POINTS :

- Discussed about disaster risk, concepts and elements
- Techniques of Risk Assessment

1. Assignment / Questions: (5&5) 1. Understand the concepts of disaster risk and Techniques of Risk Assessment

Signature of faculty

Note: Mention for each question the relevant Objectives and Outcomes Nos.

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Academic **Y**ear : 2021-22

Semester : II

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Course/Subject: Disaster Management Course Code: GR20D5153

Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

Lesson No: 31 Duration of Lesson: 1hr

Lesson Title: Global Co-operation

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1. Understand the disaster risk reduction, global and national disaster risk situation.

TEACHING AIDS : white board, Different colour markers

TEACHING POINTS :

- Discussed about Disaster Risk Reduction, Global and National disaster Risk situation

Assignment / Questions: (5&5) 1. Discussed about Disaster Risk Reduction, Global and National disaster Risk situation approach.

Signature of faculty

Note: Mention for each question the relevant Objectives and Outcomes Nos.

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Academic **Y**ear : 2021-22

Semester : II

Name of the Program: M.Tech Structural Engineering Year: I Section: A

Course/Subject: Disaster Management Course Code: GR20D5153

Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

Lesson No: 32 Duration of Lesson: 1hr

Lesson Title: People's Participation in Risk Assessment

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1. Understands the Peoples participation in risk assessment, strategies for survival

TEACHING AIDS : white board, Different colour markers

TEACHING POINTS :

- Discussed about the Peoples participation in risk assessment, strategies for survival

Assignment / Questions: (5&5) 1.Discuss about the Peoples participation in risk assessment, strategies for survival

Signature of faculty

Note: Mention for each question the relevant Objectives and Outcomes Nos.

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Academic **Y**ear : 2021-22

Semester : II

Name of the Program: M.Tech Structural Engineering Year: I Section: A

Course/Subject: Disaster Management Course Code: GR20D5153

Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor\

Lesson No: 33 Duration of Lesson: 1hr

Lesson Title: Strategies for Disaster Mitigation

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

1.Understands the Concepts and strategies of disaster mitigation, emerging trend in mitigation.

TEACHING AIDS : white board, Different colour markers

TEACHING POINTS :

- Discussed the Concepts and strategies of disaster mitigation, emerging trend in mitigation.

Assignment / Questions: (5&5) 1. Discuss the Concepts and strategies of disaster mitigation, emerging trend in mitigation.

Signature of faculty

Note: Mention for each question the relevant Objectives and Outcomes Nos.

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Academic **Y**ear : 2021-22

Semester : II

Name of the Program: M.Tech Structural Engineering Year: I Section: A

Course/Subject: Disaster Management Course Code: GR20D5153

Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

Lesson No: 32 Duration of Lesson: 1hr

Lesson Title: Programs of Disaster Mitigation in India

INSTRUCTIONAL/LESSON OBJECTIVES:

On completion of this lesson the student shall be able to:

- Understands the Structural mitigation, Nonstructural mitigation and programs of disaster management in India.

TEACHING AIDS : white board, Different colour markers

TEACHING POINTS :

- programs of disaster management in India.

- Assignment / Questions: (5&5) 1. Discuss the Structural mitigation, Nonstructural mitigation and programs of disaster management in India.

Signature of faculty

Note: Mention for each question the relevant Objectives and Outcomes Nos.

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TUTORIAL SHEET - 1

Academic **Y**ear : 2021-22

Semester : II

Name of the Program: M.Tech Structural Engineering Year: I Section: A

Course/Subject: Disaster Management Course Code: GR20D5153

Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

This Tutorial corresponds to Unit No. - I

1. What is Disaster?
2. Distinguish between Hazard and Disaster.
3. Explain in detail about various Natural Disasters.
4. Explain in detail about various Manmade Disasters.
5. Discuss about Factors affecting Disaster Management

Objective Nos.: 1
Outcome Nos.: 1

Signature of HOD Signature of faculty

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TUTORIAL SHEET - 2

Academic **Y**ear : 2021-22

Semester : II

Name of the Program: M.Tech Structural Engineering Year: I Section: A

Course/Subject: Disaster Management Course Code: GR20D5153

Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

This Tutorial corresponds to Unit No. - II

1. Discuss about repercussions of Disasters and Hazards on economy.
2. Discuss about loss of human and animal due to Disasters and Hazards.
3. Explain about destruction of Ecosystem.
4. Explain about natural disasters such as Earthquakes.
5. Explain about natural disasters such as Volcanoes.
6. Explain about natural disasters such as Cyclones.
7. Explain about natural disasters such as Tsunamis.
8. Explain about natural disasters such as Floods.
9. Explain about natural disasters such as Drought and Famines.

\

Objective Nos.: 2
Outcome Nos.: 2

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TUTORIAL SHEET - 3

Academic **Y**ear : 2021-22

Semester : II

Name of the Program: M.Tech Structural Engineering Year: I Section: A

Course/Subject: Disaster Management Course Code: GR20D5153

Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

This Tutorial corresponds to Unit No. - III

1. Discuss about study of seismic zones in India.
2. Discuss about area prone to Floods in India.
3. Discuss about area prone to Drought in India.
4. Discuss about area prone to Landslides in India.
5. Discuss about area prone to Avalanches in India.
6. Discuss about area prone to Cyclonic Disaster in India.
7. Discuss about area prone to Coastal hazards with special reference to Tsunami in India.
8. Explain about Post Disaster Diseases and Epidemics.

Objective Nos.: 3
Outcome Nos.: 3

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TUTORIAL SHEET - 4

Academic **Y**ear : 2021-22

Semester : II

Name of the Program: M.Tech Structural Engineering Year: I Section: A

Course/Subject: Disaster Management Course Code: GR20D5153

Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

This Tutorial corresponds to Unit No. - IV

1. Explain about preparedness in Disaster Management.
2. Discuss about evaluation of Risk.
3. Discuss about application of Remote Sensing in Disaster management.
4. Discuss about community preparedness

Objective Nos.: 4
Outcome Nos.: 4

Signature of HOD Signature of faculty

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TUTORIAL SHEET - 5

Academic **Y**ear : 2021-22

Semester : II

Name of the Program: M.Tech Structural Engineering Year: I Section: A

Course/Subject: Disaster Management Course Code: GR20D5153

Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

This Tutorial corresponds to Unit No. - V

1. Explain about Risk assessment.
2. Discuss about steps involved in Risk assessment.
3. Explain about Disaster Risk Reduction.
4. Explain about types of Risk Assessment.
5. Explain about Disaster Mitigation.
6. Discuss about emerging trends in Disaster Mitigation.
7. Discuss about strategies of Disaster Mitigation.
8. Explain about structural mitigation.
9. Explain about Non-structural mitigation.
10. Discuss about Programs of Disaster Mitigation in India.

Objective Nos.: 5
Outcome Nos.: 5

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ASSIGNMENT SHEET – 1

Academic **Y**ear : 2021-22

Semester : II

Name of the Program: M.Tech Structural Engineering Year: I Section: A

Course/Subject: Disaster Management Course Code: GR20D5153

Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

This Assignment corresponds to Unit No. - I & Lesson

1. Write briefly about following
    a) Disaster
    b) Disaster Management
    c) Factors affecting Disaster Management
    d) Hazard
    e) Vulnerability
    f) How many seismic zones are there as per IS code? What are they?
2. Explain about how Disaster effect on Environment
3. Write the difference between Hazard and Disaster ? Also explain how hazard become a Disaster ?
4. Explain about levels of Disaster and Types of Disaster?
5. What do you know about Hazard Assessment ? Explain steps in Hazard Assessment ?
6. Explain about Major disasters occurred in Global, National and Local level ?
7. Explain in detail about factors affecting Vulnerability?
8. Write about vulnerabilities to Earthquake and Floods ?

Objective Nos.: 1
Outcome Nos.: 1

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ASSIGNMENT SHEET – 2

Academic **Y**ear : 2021-22

Semester : II

Name of the Program: M.Tech Structural Engineering Year: I Section: A

Course/Subject: Disaster Management Course Code: GR20D5153

Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

This Assignment corresponds to Unit No. - II & Lesson

1. Explain about the earthquakes and also identify its influence on ecosystem.
2. Explain about floods? Identify the harmful effects of floods?
3. Classify the droughts in terms of impact and also mention it's impact on Economic, Environmental and Social levels?
4. What is Eco-system? What are the factors contributing to the destruction of ecosystem?
5. Explain about the industrial accidents with suitable examples and the repercussions of the same on the human life.
6. Discuss about the landslides.
7. How man-made disasters can be minimised?
8. Write a brief note on volcanoes. What are the hazards involved?

Objective Nos.:2
Outcome Nos.: 2

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ASSIGNMENT SHEET – 3

Academic **Y**ear : 2021-22

Semester : II

Name of the Program: M.Tech Structural Engineering Year: I Section: A

Course/Subject: Disaster Management Course Code: GR20D5153

Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

This Assignment corresponds to Unit No. - III & Lesson

1. Discuss about area prone to Floods in India.
2. Discuss about area prone to Drought in India.
3. Discuss about area prone to Landslides in India.
4. Discuss about area prone to Avalanches in India.
5. Discuss about area prone to Cyclonic Disaster in India.
6. Discuss about area prone to Coastal hazards with special reference to Tsunami in India.

Objective Nos.: 3
Outcome Nos.: 3

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ASSIGNMENT SHEET – 4

Academic **Y**ear : 2021-22

Semester : II

Name of the Program: M.Tech Structural Engineering Year: I Section: A

Course/Subject: Disaster Management Course Code: GR20D5153

Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

This Assignment corresponds to Unit No. - IV & Lesson

1. Explain about preparedness in Disaster Management.
2. Explain the Disaster Techniques of Assessment of Risk?
3. Discuss about evaluation of Risk.
4. Discuss about application of Remote Sensing in Disaster management.
5. Discuss about community preparedness

Explain membrane analogy for obtaining behavior of non-circular shafts under torsion
Objective Nos.: 4
Outcome Nos.: 4

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ASSIGNMENT SHEET – 5

Academic **Y**ear : 2021-22

Semester : II

Name of the Program: M.Tech Structural Engineering Year: I Section: A

Course/Subject: Disaster Management Course Code: GR20D5153

Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

This Assignment corresponds to Unit No. - V & Lesson

1. Explain about Disaster Mitigation.
2. Discuss about emerging trends in Disaster Mitigation.
3. Discuss about strategies of Disaster Mitigation.
4. Explain about structural mitigation.
5. Explain about Non-structural mitigation.
6. Discuss about Programs of Disaster Mitigation in India.

Objective Nos.: 5
Outcome Nos.: 5

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EVALUATION STRATEGY

Academic **Y**ear : 2021-22

Semester : II

Name of the Program: M.Tech Structural Engineering Year: I Section: A

Course/Subject: Disaster Management Course Code: GR20D5153

Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

1. TARGET:

A) Percentage for pass: 90%

b) Percentage of class:

Total Strength: 21

S.No.	Class / Division	No. of Students
1	First Class with distinction	12
2	First Class	5
3	Pass Class	2

2. COURSE PLAN& CONTENT DELIVERY

S.No	Plan	Brief Description
1	Practice classes	34 Theory classes for Section A
3	Assignments	Assignments for solving numerical problems

3. METHOD OF EVALUATION

3.1 Continuous Assessment Examinations

- Assignments: Assignments to assess the knowledge of the student on the basics and concepts and Numerical Analysis in Disaster Management
- Seminars: To assess the knowledge of the student in Disaster Management.
- Quiz: To assess the knowledge of the student in various concepts and basics of Disaster Management
- Internal Examination: Internal Examinations to assess their overall knowledge in Disaster Management

3.2. Semester/End Examination

To test their abilities in the course Disaster Management and to approve their abilities learnt during the same.

4. List out any new topic(s) or any innovation you would like to introduce in teaching the subjects in this Semester.

Signature of HOD

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MAPPING

GR20D5153/ **Disaster Management**	**Course Outcomes**				
Course Objectives	1	2	3	4	5
1	X				
2		X			
3			X		
4				X	
5					X

`

Assessments

1. Assignment 2. Internal Examination 3. External Examination

4. Practical Projects 5. Viva

GR20D5153/ **Disaster Management**	**Course Outcomes**				
Assessments	1	2	3	4	5
1	X	X	X	X	X
2	X	X	X	X	X
3	X	X	X	X	X
4					
5					

GR20D5153/ **Disaster Management**	**Course Objectives**				
Assessments	1	2	3	4	5
1	X	X	X	X	X
2	X	X	X	X	X
3	X	X	X	X	X
4					
5					

CO-PO Mappings:

GR20D5153/ **Disaster Management**						
Course Outcomes	**A**	**B**	**C**	**D**	**E**	**F**
1	M		M	M	H	M
2		M	M	M	H	
3	M			H	H	M
4	M	M	M	M	H	
5				M	H	

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RUBRIC TEMPLATE

Academic **Y**ear : 2021-22
Semester : III
Name of the Program: M.Tech Structural Engineering Year: I Section: A
Course/Subject: Disaster Management Course Code: GR20D5153

Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering
Designation: Assistant Professor

Objective: To learn basics and concepts of Disaster Management.
Student Outcome:
Capacity to integrate knowledge and to analyze, evaluate and manage the different public health aspects of disaster events at a local and global levels, even when limited information is available. Capacity to manage the Public Health aspects of the disasters

			Beginning	**Developing**	**Reflecting Development**	**Accomplished**	**Exemplary**	**Score**
S. No	**Name of the Student**	**Performance Criteria**	**1**	**2**	**3**	**4**	**5**	
1	21241D 2014	Types of Hazards and Disasters	Low level of knowledge on Types of Hazards and Disasters	Able to discuss the Types of Hazards and Disasters	Ability to explain the application Types of Hazards and Disasters	Full knowledge on Types of Hazards and Disasters	Analyzing and implement in Structures	5
		The level of knowledge on Phases of disaster	Low level of knowledge on Phases of disaster	Able to discuss Phases of disaster	Ability to explain Phases of disaster	Full knowledge on Phases of disaster	Analysing and application of knowledge on Phases of disaster	4
		The level of knowledge to Mitigation Strategies of Disaster	Low level of knowledge to Mitigation Strategies of Disaster	Ability to discuss and to study the Mitigation Strategies of Disaster	Ability to explain Mitigation Strategies of Disaster.	Full knowledge on Mitigation Strategies of Disaster.	Analysing and implementing the knowledge of Mitigation Strategies of Disaster	3
							Average Score	4

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COURSE COMPLETION STATUS

Academic **Y**ear : 2021-22

Semester : II

Name of the Program: M.Tech Structural Engineering Year: I Section: A

Course/Subject: Disaster Management Course Code: GR20D5153

Name of the Faculty: Mr. K. Veera Babu Dept.: Civil Engineering

Designation: Assistant Professor

Actual Date of Completion & Remarks, if any

Units	**Remarks**	**Objectives Achieved**	**Outcomes Achieved**
Unit I	29-04-2022 Unit covered on time	1	1
Unit II	27-05-2022 Unit covered on time	2	2
Unit III	29-06-2022 Unit covered on time	3	3
Unit IV	22-07-2022 Unit covered on time	4	4
Unit V	12-08-2022 Unit covered on time	5	5

Signature of HOD Signature of faculty

Date: Date:

Note: After the completion of each unit mention the number of Objectives & Outcomes Achieved.

M.TechI Year I Semester Regular Examinations[October 2021]

Disaster Management

(M.Tech. Structural Engineering)

Time: 3 hours **Max Marks: 70**

< **Note: T**ype the questions in the given format only, Times New Roman font, size 12 >

Instructions:

1. Question paper comprises of **Part-A** and **Part-B**
2. **Part-A** (for 20 marks) must be answered at one place in the answer book.
3. **Part-B** (for 50 marks) consists of **five questions with internal choice,** answer all questions.

PART – A

(Answer ALL questions. All questions carry equal marks)

10 * 2 = 20 Marks

1. a.	Define the Disaster Management.	**[2]**	**1**	**1**
b.	What is the difference between Disaster and Hazard?	**[2]**	**1**	**4**
c.	Differentiate between a Tsunami and a cyclone.	**[2]**	**2**	**4**
d.	How Drought differs from a Famine?	**[2]**	**2**	**1**
e.	What are the Areas prone to Cyclones?	**[2]**	**3**	**1**
f.	What are the Coastal Hazards?	**[2]**	**3**	**1**
g.	What is Disaster Preparedness?	**[2]**	**4**	**1**
h.	How do you Evaluate the Risk?	**[2]**	**4**	**2**
i.	Define the Disaster Mitigation.	**[2]**	**5**	**2**
j.	How the War differs from the Conflict?	**[2]**	**5**	**4**

PART – B

(Answer ALL questions. All questions carry equal marks)

5 * 10 = 50 Marks

2.	**(a)**Discuss about Factors affecting Disaster Management **(b)** Explain in detail about various Natural Disasters.	**[10]**	**CO 1**	**6**
	OR			
3.	**(a)** Distinguish between Hazard and Disaster. **(b)** Explain in detail about various Manmade Disasters.	**[10]**	**CO 1**	**4**

4.	**(a)** Write Short notes on Earthquakes, Volcanoes and Avalanches. **(b)**Explain about destruction of Ecosystem	**[10]**	**CO 2**	**1**
	OR			
5.	**(a)** Explain the Repercussions of Disasters and Hazards: Loss of Human Life. **(b)** Explain about Manmade disasters such as Oil slicks and spills.	**[10]**	**CO 2**	**2**
6.	**(a)**Explain about Post Disaster Diseases and Epidemics. **(b)** Discuss about study of seismic zones in India.	**[10]**	**CO 3**	**2**
	OR			
7.	**(a)** Discuss about area prone to Coastal hazards with special reference to Tsunami in India. **(b)** Discuss about area prone to Cyclonic Disaster in India.	**[10]**	**CO 3**	**6**
8.	**(a)**Discuss in detail about the Emerging Trends in Disaster Mitigation. **(b)** Discuss about evaluation of Risk.	**[10]**	**CO 4**	**6**
	OR			
9.	**(a)** Explain about preparedness in Disaster Management. **(b)** Discuss about application of Remote Sensing in Disaster management.	**[10]**	**CO 4**	**4**
10.	**(a)** Discuss about steps involved in Risk assessment. **(b)** Discuss about emerging trends in Disaster Mitigation.	**[10]**	**CO 5**	**6**
	OR			
11.	**(a)** Discuss about the Global Co-operation in Risk Assessment and Warning. **(b)** Explain about types of Risk Assessment	**[10]**	**CO 5**	**1**

*****

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Department of Civil Engineering

I M.Tech. II Semester MID I EXAMINATION June 2022

DISASTER MANAGEMENT (GR20D5153)

Time:75 Minutes Date of Examination: 10-06-2022 (FN) Max. Marks : 15 Marks

Answer all questions 3 x 5 = 15 Marks

Q. No.		M	BL	CO	PI
1	a) Explain about hazard and how hazard become a Disaster ? b) Explain about levels of Disaster and Types of Disaster?	2M 3M	BL 2 BL 2	CO1	4.1.2
	OR				
2	What do you know about Vulnerability? Explain in detail about factors affecting Vulnerability?	5M	BL 2	CO1	4.1.2
3	Explain about the earthquakes and also identify its influence on ecosystem.	5M	BL 3	CO2	5.2.1
	OR				
4	Explain about floods? Identify the harmful effects of floods?	5M	BL3	CO2	4.1.2
5	Examine in detail about Manmade and Natural Disasters with suitable examples.	5M	BL4	CO1	5.2.1
	OR				
6	Classify the droughts in terms of impact and also mention it's impact on Economic, Environmental and Social levels?	5M	BL4	CO2	4.1.2

GOKARAJU RANGARAJU INSTITUTE OF ENGINEERING AND TECHNOLOGY

Department of Civil Engineering

I M.Tech. II Semester MID I EXAMINATION June 2022

DISASTER MANAGEMENT (GR20D5153)

Time: 15 Minutes Date of Examination: 10-06-2022 (FN) Max. Marks : 5 M

Answer all questions 10 x 1/2 = 5 Marks

Name:_____ Roll No.

1. National Institute of Disaster Management was inaugurated on …… ( )
   a. September 23, 2002 c. August 14, 2001
   b. October 16, 2003 d. August 14, 2004
2. Where is the Tsunami Warning Centre located in India? ( )
   a. New Delhi c. Hyderabad
   b. Gujarat d. Kolkata
3. India's total flood-prone area is up to…….. ( )
   a. 30% b. 20% c. 12% d. 10%
4. India's total cyclone-prone area is ……. ( )
   b. 15% b.10% c. 8% d. 20%
5. International Day of Natural Disaster Reduction is celebrated on……. ( )
   a. June 15 b. March 5 c. October 13 d. September 13
6. What year Bhopal Gas Tragedy happens, and due to which gas? **( )**
   a. In 1986, Ethyl isocyanate c. In 1984, Methyl isocyanate
   b. In 1984, Potassium isothiocyanate d. In 1987, Sodium isothiocyanante
7. Which of the following would be classified as natural disaster ( )
   a. Airplane crash b. Famine c. hunger d. Train crash
8. The Disaster management act was enacted in ( )
   a. 2006 b. 2003 c.2005 d.2009
9. which of the following is not part of geological disaster ? ( )
   a. Volcanoes b. Earthquakes c. Tsunami d. Sea surge
10. Tsunami word is derived from which language word. **( )**
    a. Greek b. Indian c. French d. Japanese

GOKARAJU RANGARAJU INSTITUTE OF ENGINEERING AND TECHNOLOGY

Department of Civil Engineering

I M.Tech. II Semester MID II EXAMINATION Aug 2022

DISASTER MANAGEMENT (GR20D5153)

Time:75 Minutes Date of Examination: 18-08-2022 (FN) Max. Marks : 15 Marks

Answer all questions 3 x 5 = 15 Marks

Q. No.		M	BL	CO	PI
1	Describe about the Areas prone to Floods, cyclonic and coastal hazards.	5M	BL 2	CO3	5.2.2
	OR				
2	Explain about the Post-Disaster Diseases and Epidemics.	5M	BL 2	CO3	5.1.2
3	Illustrate about the different phases of disaster Management ?	5M	BL 3	CO4	5.2.1
	OR				
4	Examine the various uses of remote sensing in the evaluation of the disaster risk.	5M	BL3	CO4	3.2.2
5	Distinguish between structural mitigation and non-structural mitigation	5M	BL4	CO5	5.2.1
	OR				
6	Classify the various techniques of risk assessment and also outline about the people's role in risk assessment	5M	BL4	CO5	4.3.1

GOKARAJU RANGARAJU INSTITUTE OF ENGINEERING AND TECHNOLOGY

Department of Civil Engineering

I M.Tech. II Semester MID II EXAMINATION Aug 2022

DISASTER MANAGEMENT (GR20D5153)

Time: 15 Minutes Date of Examination: 18-08-2022 (FN) Max. Marks : 5 M

Answer all questions 10 x 1/2 = 5 Marks

Name:_____ Roll No.

1. Which phases of disaster management phase minimize the effect of disaster ( )
   c. Mitigation c. preparedness
   d. Response d. Recovery
2. Which phases of disaster management phase plans how to respond ( )
   a. Mitigation c. preparedness
   b. Response d. Recovery
3. India's total drought-prone area is up to…….. ( )
   c. 30% b. 20% c. 42% d. 10%
4. India's total cyclone-prone area is ……. ( )
   a. 15% b.10% c. 8% d. 20%
5. International Day of Natural Disaster Reduction is celebrated on……. ( )
   b. June 15 b. March 5 c. October 13 d. September 13
6. Which phases of disaster management phase return the community to normal ( )
   a. Mitigation c. preparedness
   b. c. Response d. Recovery
7. Which of the following would be classified as natural disaster ( )
   b. Airplane crash b. Famine c. hunger d. Train crash
8. Vulnerability analysis comes in which part of the Disaster Management Cycle ( )
   a. Mitigation c. preparedness
   b. Response d. Recovery
9. The National Disaster Management Authority (NDMA) is headed by ( )
   b. PM b. President c. Governor d. CM
10. Tsunami word is derived from which language word. **( )**
    b. Greek b. Indian c. French d. Japanese

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Bachupally, Kukatpally, Hyderabad – 500 090. (040) 6686 4440

DISASTER MANAGEMENT

MID MARKS

S.No	Reg No	MID I	MID II
1	21241D2001	11	13
2	21241D2002	17	18
3	21241D2003	19	17
4	21241D2004	13	15
5	21241D2005	17	17
6	21241D2006	16	17
7	21241D2007	17	18
8	21241D2008	12	13
9	21241D2009	18	15
10	21241D2010	13	14
11	21241D2011	13	16
12	21241D2012	14	13
13	21241D2013	13	12
14	21241D2014	16	16
15	21241D2015	19	17
16	21241D2016	17	17
17	21241D2017	13	11
18	21241D2018	13	0
19	21241D2019	0	0
20	21241D2020	10	15
21	21241D2021	12	14

Gokaraju Rangaraju Institute of Engineering & Technology

(Autonomous College Affiliated to JNTUH) (12 Pages)

Bachupally, Kukatpally, Hyderabad - 500090

I II **MID TERM EXAMINATION**

No. 997205

H.T. No. 2 1 2 4 1 D 2 0 0 2

Name of the Examination M.Tech 1st Year 2nd Sem 2nd Mid-I Examination

Course M.Tech (STE) Branch Civil Date 10-06-2022

10/6/22

Signature of the Invigilator

Q.NO.	1		2		3		4		5		6		TOTAL
	a	b	a	b	a	b	a	b	a	b	a	b	
MARKS			4		5				4				13

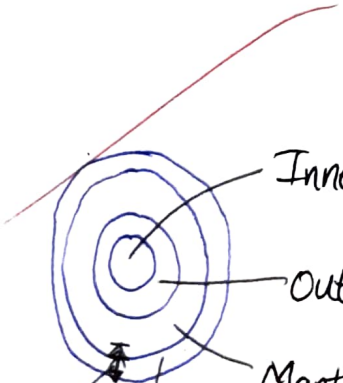
START WRITING FROM HERE

3) **Earthquake:**

- Earthquake is caused due to shaking of earth's interior (crust) and effects the region around the epicenter.

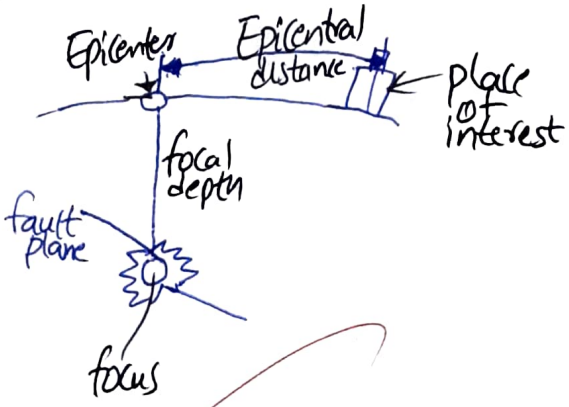
Occurence of Earthquake:

- Earth consists of 4 layers such as crust, hot nearly solid mantle, molten outer core and solid inner core and as shown below



- Lithosphere consists of solid crust and top and stiff layer of mantle.
- Earth isn't a continuous piece that wraps around layers like an Egg shell.
- Earth is consisting of giant puzzle pieces called tectonic plates.
- These tectonic plates shift/drift down the mantle and low viscous/slowly causes the stress in the earth.
- If the stresses are too high, they break/cracks called faults
- The fault will be moved and an focus is incorporated at point
- Earthquake is a sudden movement of earth along a fault line

Terminology of Earthquake:



Focus(or) Hypocenter: The point in the earth's surface where the earthquake originates

Focal depth: The distance between Epicenter and Hypocenter

Epicenter: The point on the earth's surface vertically above the place of origin of earthquake.

Fault plane: The weakest point in the tectonic plate where pressure beneath the is high and of higher amount

Intensity: The amount of earthquake occured and it is dependant on place of observation (it varies from point to point of formation of earthquake)
- It is measured by Modified Mercalli scale

Magnitude: The quantity of earthquake and is independent of place of observation.
- It is measured by Ritcher scale.

Seismology: Study of earthquakes is called seismology and persons are called seismologist

Seismometer: The instrument that measures the intensity, duration and direction of earthquake.

Seismograph: When earthquake occurs, the instrument (Seismometer) runs (shows) on the chart paper called seismogram.

Seismic waves:
- These waves are classified as 4 types
i) P-waves & primary waves - Recorded first, travells fast. 5-7 km/s
ii) S-waves & secondary waves - Recorded next to P-waves, 3-4 K
iii) L-waves (a) Love waves - Recorded next to S-waves, by AE LOV
iv) Rayleigh waves - Recorded next to L-waves and by Rayl

Influence on ecosystem:
- Immediate Consequences of earthquake are
i) Land slides and Avalanches
ii) Change of hydrological cycle
iii) Loss of biodiversity
iv) Uneven climatic changes and loss of livelihoodness of (unexpected) plants, humans and animals.

2) Vulnerability:

- The Ability to resist the hazard is called Vulnerability
- If the Situation is out of chance, it is called more Vulnerable
- If the Situation can be reserved, it's called less Vulnerable
- The ability/capability of how much strong the about the Situation of disaster.

Factors affecting Vulnerability:

1] Transportation: Roads/connectivity of roads should be good so as to travel fast when the hazard comes.

2] Education: Educating the people before (prior) the hazard arrival

3] Location of building and structural design: Design should be strong and rigid and location shouldn't on the hilly area (should be avoided).

4] Home preparation (education)

5] Sex, health and wealth (poverty)

6] Alarms, Warnings and prior intimation

7] Identification of Vulnerability before the hazard arrives.

8] Disaster Response Force provision and arrangement

9] Monitoring the actions of all earth movements exactly

5)

Natural Disasters:

- The Disaster that occur naturally with action of nature (mostly) is called natural disasters.

Eg: Floods
Droughts
Earthquake
Land slides

- Floods causes the inundation of land not submerged completely
- Droughts are unexpected crisis on the food.
- Earthquakes are caused due to the movement of tectonic plates.
- Land slides are moving down (or) sloping of earth's crust movement.

Manmade Disasters:

- The Disasters that are made by the efforts of man (or) by improper maintenance of industries leads to the fault in any time and causes the disaster.

Eg: i) Bhopal Gas Tradegy

- In 1984, Bhopal - Due to leakage of Methyl Isocy (MIC) gas, somany people lost their lives and some injured till now

ii) Global Corona virus (COVID-19)

China, 2019- Due to flu (virus), it effected whole the world and taken up most of the lives.

[iii] The Titanic ship Immersion,

Due to improper visuals of iceberg and collision with it made ~~its~~ an disaster in losing of some many lifes.

4

A/5

GOKARAJU RANGARAJU INSTITUTE OF ENGINEERING AND TECHNOLOGY

Department of Civil Engineering

I M.Tech. II Semester MID I EXAMINATION June 2022

DISASTER MANAGEMENT (GR20D5153)

Time: 15 Minutes Date of Examination: 10-06-2022 (FN) Max. Marks : 5 M

Answer all questions **10 x 1/2 = 5 Marks**

Name: Bandi Sri Ramgopal **Roll No.** 2 1 2 4 1 A 2 0 0 2

1. National Institute of Disaster Management was inaugurated on ..... (d) ✓
   a. September 23, 2002
   b. October 16, 2003
   c. August 14, 2001
   d. August 14, 2004

2. Where is the Tsunami Warning Centre located in India? (C) ✓
   a. New Delhi
   b. Gujarat
   c. Hyderabad
   d. Kolkata

3. India's total flood-prone area is up to..... (b) ✗
   a. 30% b. 20% c. 12% d. 10%

4. India's total cyclone-prone area is ..... (C) ✓
   b. 15% b.10% c. 8% d. 20%

5. International Day of Natural Disaster Reduction is celebrated on..... (C) ✓
   a. June 15 b. March 5 c. October 13 d. September 13

6. What year Bhopal Gas Tragedy happens, and due to which gas? (C) ✓
   a. In 1986, Ethyl isocyanate
   b. In 1984, Potassium isothiocyanate
   c. In 1984, Methyl isocyanate
   d. In 1987, Sodium isothiocyanante

7. Which of the following would be classified as natural disaster (C) ✗
   a. Airplane crash b. Famine c. hunger d. Train crash

8. The Disaster management act was enacted in (B C) ✓
   a. 2006 b. 2003 c.2005 d.2009

9. which of the following is not part of geological disaster ? (d) ✓
   a. Volcanoes b. Earthquakes c. Tsunami d. Sea surge

10. Tsunami word is derived from which language word. (d) ✓
    a. Greek b. Indian c. French d. Japanese

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GOKARAJU RANGARAJU INSTITUTE OF ENGINEERING AND TECHNOLOGY

Department of Civil Engineering

I M.Tech. II Semester MID II EXAMINATION Aug 2022

DISASTER MANAGEMENT (GR20D5153)

Time: 15 Minutes Date of Examination: 18-08-2022 (FN) Max. Marks : 5 M

Answer all questions 10 x 1/2 = 5 Marks

Name: M. Vaishnavi Roll No. 21241D2007

1. Which phases of disaster management phase minimize the effect of disaster (a)
   a. Mitigation c. preparedness
   b. Response d. Recovery
2. Which phases of disaster management phase plans how to respond (c)
   a. Mitigation c. preparedness
   b. Response d. Recovery
3. India's total drought-prone area is up to…….. (d)
   a. 30% b. 20% c. 42% d. 10%
4. India's total cyclone-prone area is …… (c)
   a. 15% b.10% c. 8% d. 20%
5. International Day of Natural Disaster Reduction is celebrated on…… (d)
   a. June 15 b. March 5 c. October 13 d. September 13
6. Which phases of disaster management phase return the community to normal (d)
   a. Mitigation c. preparedness
   b. c. Response d. Recovery
7. Which of the following would be classified as natural disaster (c)
   a. Airplane crash b. Famine c. hunger d. Train crash
8. Vulnerability analysis comes in which part of the Disaster Management Cycle (a)
   a. Mitigation c. preparedness
   b. Response d. Recovery
9. The National Disaster Management Authority (NDMA) is headed by (a)
   a. PM b. President c. Governor d. CM
10. Tsunami word is derived from which language word. (d)
   a. Greek b. Indian c. French d. Japanese

Gokaraju Rangaraju Institute of Engineering & Technology
(Autonomous College Affiliated to JNTUH) (12 Pages)
Bachupally, Kukatpally, Hyderabad - 500090

I II **MID TERM EXAMINATION**

No. 159176 H.T. No. 1 2 4 1 5 - c c 7

Name of the Examination I M.Tech II sem II mid

Course Disaster Management Branch CTE Date 19/09/23

Signature of the Invigilator

Q.NO.	1		2		3		4		5		6		TOTAL
	a	b	a	b	a	b	a	b	a	b	a	b	
MARKS	5						4				5		14

START WRITING FROM HERE

1. Floods

Floods are caused due to excessive heavy rainfall in a particular area or catchment for long time causes floods. It is the excessive runoff water from the rainfall.

1. Due to floods there is a chance of diseases spread, as water gets staginated at once place for long time.
2. Damage to the man-made structures like buildings, hospitals, monuments, etc.
3. Due to excess runoff, soil erosion takes place.
4. Causes landslides.
5. Damage to the crops.
6. No food for people in the zone during the floods.

The flood prone areas in India.

1. Uttar Pradesh
2. Punjab
3. Rajasthan
4. Bihar
5. Assam

Because of the Indo-gangetic Brambaputra plain, the Brambaputra and Ganga Basin has 60% change of flooding with excessive flood water. Because of this North east and North state have excessive flooding.
In year 2010, Uttar pradesh has seen flood which killed people around 5000 members and causing structural damage.

Mostly every year Assam gets flooded with rainwater, leaving people homeless, parentless and childless.

Cyclone and Costal Hazard.

Cyclone are caused mostly at costal region. Four states, Tamil Nadu, Andhra Pradesh, Odisha, and West Bengal and Union Territory, Puducherry is the mostly prone cyclone area. This is towards east of India, which has Bay of Bengal. coming towards west, near Arabian Sea, Gujarat state is most prone to cyclones.

Costal Hazard effect the area that is near to the costal area, the states that are connected to seas and Oceans like, Gujarath, Maharastra, Kerala, karnataka, Tamil Nadu, Telangana Andra Pradesh, Odisha, West Bengal. All these states are affected with costal hazards.

4. Various uses of [illegible] evaluation of the disaster Risk.

The technology Remote sensing helps us to find the disaste event before it happens. This helps us for preparedness of the disaster. Without going to site using satellites, sensors, etc are used to find the event happening. This helps to relocate the people, prevents us from huge damage and can save many lifes and preparing.

where can we use remote ~~sens~~ sensing

1. Tracking Wind.

This helps ~~to~~ us to find the direction of wind blowing at which speed, etc.

2. Earthquake detect.

It helps us to find the active fault, earthquake caused at which time, location, earthquake magnitude and intensit can also be known.

3. Draught detect.

It can detect the drought prone areas, if there is no rain in a particular area for more than one year.

4. Risk assessement.

This could help us to know the places that are vulnerable to any disaster and hazard.

5. Remote areas.

Areas where there is no good communication, this helps us to known about the areas, and to help them during disasters.

So. There are some places, that are unaware by the people, by using remote sensing it can help to communicate and prepare them to how to prevent or

reduce the impact of disaster.

6. Detect the damage

Remote sensing can be used after event happened. It helps us to known about the damage caused, changes in geography of the particular area etc.

6 Techniques of risk assessment

Risk ~~assessment~~ is equal to the product of hazard and vulnerability.

Risk = Hazard x Vulnerability

Risk assessment helps to be prepard for the disaster.

Steps Involved in risk assessment.

step-1: Identify the hazard or disaster.

step-2: Known the places that are affecting by the event.

step-3: Start the prepadeness among the people.

step-4: Rellocate the people that are in the area.

step-5: Review the process.

Techniques used.

1. Remote sensing
2. Communication with gorernment body.
3. Common people's role.

People's role in risk assessment.

It is recommanded that people need to take initiative and come forward help others during and before an event happening.

2. People need to communicate with others and help them with the required information.

3. Personally people should build their houses (or) re design them to make it earthquake proof and wind proof.

4. They should come forward and take flood insurance and other available insurance.

5. They should also help the community, colony, etc and educate them or prepare them about the disaster. They can help the government body.

6. People who are not in the effected area can come forward and help the people by providing, food, clothes, medicines, grocery, etc that are required for the people that are affected by the disaster.

7. People can give money the government or any relief funds that help to clear the damage as soon as possible.

5

Sandya

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Bachupally, Kukatpally, Hyderabad - 500090

I	II	MID TERM EXAMINATION

No. 159180

H.T. No.	2	1	2	4	1	D	2	0	1	2

Name of the Examination I M.Tech. II sem Mid-II Exam

Course Disaster Management Branch STE Date 18/09/2022

Signature of the Invigilator

Q.NO.	1		2		3		4		5		6		TOTAL
	a	b	a	b	a	b	a	b	a	b	a	b	
MARKS			4		5						3		12

START WRITING FROM HERE

Part-B

9) post-Disaster Diseases and Epedemics.

After Disaster, the area prone to disaster was fully damaged. The ecolog Landscape and homes all were damaged. Mainly after floods and Tsunamies, the water is stagnated. Due to disasters so many lives expired and become deadbodies. The flies and other insecticides cause nuisance in the stagnated water. This causes numerous diseases to the people.

The Diseases are may be Dengue, Malaria, Typhoid, Epedemic et The diseases are caused due to unsanitization, deficiency of healthy food in the local premises.

This vulnerability to diseases can be eliminated by bringing proper awareness (preparedness) in the community.

After disaster maintaining sanitisation, preparedness to tackle tackle any situation may reduce the intensity of post-Disaster Diseases.

The disasters like nuclear explosions, fires harmful gases are released. Due to this gases dangerous diseases may come. Hence it is better to construct nuclear power plants and other industries away from the cities and towns.

To overcome any type of post-Disaster Diseases, awareness or preparedness is necessary. The government is conducting awareness programmes now, but increasing the speed can Improve the awareness among people about disasters.

Different phases of Disaster Management :-

1. Mitigation phase
2. preparedness phase
3. Response phase
4. Recovery phase.

Mitigation phase : In this phase, how the disaster is to be prevented is discussed. In this phase first studied about the previous disasters, what is the cause of disaster, how it can be reduced total review is to be done. To prevent the disasters what cautions to be taken is assessed and explain the same to the community and bring the awareness among them. This can mitigate the disasters.

Since most of disasters are manmade, we can mitigate those by taking some measures and bring awareness.

preparedness phase :- In this phase, how to be prepared to reduce the effect of disaster that is coming soon is discussed. In this how to construct the homes, what things to be done when a disaster came and what precautions to be taken to reduce the post-Disaster diseases are explained to the people.

Response phase :-

In this phase, how the people are responded to the disaster, are discussed. What are the sources (food, drinking water) supplied to the people. Is the supplied sources are sufficient or not are verified. This all should be done, to tolerate the next disaster effectively.

Recovery phase :- This is the last phase, in which, how speed the people recovered from the disaster are discussed. It depends on the "preparedness".

6) Techniques of risk assessment :

1. Qualitative assessment
2. Quantative assessment
3. Genesic assessment
4. Site-specific assessment

People's role in risk assessment :

Risk Assessment plays major role in disaster management. By assessing risk, we can evacuate people and aware the people regarding the disaster duly reduce the effect of disaster.

The disaster risk assessment is done using remote sensing, by studying past records and asking the people living near the disaster prone area. They can tell the circumstances during the disaster, what are the changes occured before and after disaster, the natural indications of disaster before occurance and effects of disaster etc..

By this one can assess the risk in a particular area.

GOKARAJU RANGARAJU INSTITUTE OF ENGINEERING AND TECHNOLOGY

Department of Civil Engineering

I M.Tech. II Semester MID II EXAMINATION Aug 2022

DISASTER MANAGEMENT (GR20D5153)

Time: 15 Minutes Date of Examination: 18-08-2022 (FN) Max. Marks : 5 M

10 x 1/2 = 5 Marks

Answer all questions

Name: SHAIK. FEROZ Roll No. 21241D2012

1. Which phases of disaster management phase minimize the effect of disaster (A)
   a. Mitigation c. preparedness
   b. Response d. Recovery
2. Which phases of disaster management phase plans how to respond (B)
   a. Mitigation c. preparedness
   b. Response d. Recovery
3. India's total drought-prone area is up to…….. (B)
   a. 30% b. 20% c. 42% d. 10%
4. India's total cyclone-prone area is …… (D)
   a. 15% b.10% c. 8% d. 20%
5. International Day of Natural Disaster Reduction is celebrated on…… (B)
   a. June 15 b. March 5 c. October 13 d. September 13
6. Which phases of disaster management phase return the community to normal
   a. Mitigation c. preparedness
   b. c. Response d. Recovery
7. Which of the following would be classified as natural disaster (B)
   a. Airplane crash b. Famine c. hunger d. Train crash
8. Vulnerability analysis comes in which part of the Disaster Management Cycle (A)
   a. Mitigation c. preparedness
   b. Response d. Recovery
9. The National Disaster Management Authority (NDMA) is headed by (A)
   a. PM b. President c. Governor d. CM
10. Tsunami word is derived from which language word. (D)
   a. Greek b. Indian c. French d. Japanese

Ans:-

C. Madhavi
MTech 1st year
21241D2003

1) Write briefly about the following.

a) Disaster:-

- A sudden accident or a natural catastrophe that causes a great damage or loss of life
- A disaster is a serious disruption occuring over a short (or) long period of time that causes wide spread human, material, economic (or) environmental loss which exceeds the ability of the affected community or society to cope using its own resources.

DISASTER

(Alphabetically means)

Negative

D – Destructions

I – incidents

S – Sufferings

A – Administrative, financial failure.

S – Sentiments

T – Tragedies

E – Eruption of communicable diseases.

R – Research program and its implementation.

positive

D – developments

I – Innovation

S – Sharing Information

A – Awareness

S – Self-sufficiency

T – transformation.

E – Educate

R – Resilience.

b) Disaster Management:

- Disaster Management is a planned approach for the prevention of disaster, preparedness and response to disasters, and recovery following disasters.

- Disaster Management is required for the following reasons: —
  - To minimize deaths and loses.
  - Minimum level of preparedness and planning can do it.
  - Without identification of Risk and vulnerability, only knowledge of hazards is of no use
- Normal procedures are insufficient to handle grave situations.

c) Factors affecting Disaster Management:

- poverty.
- Population growth: —
  There is an obvious connection between the increase in losses from a disaster and the increase in population.
- Rapid urbanization.
- Transitions in cultural practices.
- Environmental degradation.

d) Hazard:-

Hazard define as "A dangerous condition or event, that threat or have the potential for causing injury to life or damage to property or the environment".

- The word hazard originated from French 'hazard' and 'az-zhar' in Arabic meaning chance (or) luck.

- Hazard is any substance, phenomenon or situation which has the potential to cause disruption (or) damage to people, their property, their services and their environment.

- It is divided into two groups :—
  - Natural hazards.
  - Man-made hazards;

e) Vulnerability.

- Vulnerability is a concept which describes factors or constrains of an economic, social, physical (or) geographic nature, which reduces the ability to prepare for and cope with impact of hazard.

- Vulnerability describes the characteristics and circumstances of a community, system or asset that make it susceptible to the damaging effects of a hazard.

- There are many aspects of vulnerability, arising from various physical, social, economic and environmental factors.

4 types of vulnerability

- physical vulnerability
- Social vulnerability
- Economic vulnerability
- Environmental vulnerability

f) Capacity (or) capacity building :-

- Capacity is the combination of all the strengths and resources available within a community, society or organization that can reduce the level of risk or the effects of a disaster.

- These actions include :-
  - Resource development
  - Financial Management.
  - organizational learning.
  - Leadership development.

Need for capacity building

- comprehensive formulation of objectives.
- Conduct of training needs analysis.
- preparation of knowledge, skills and attitude.
- Administration of face to face training programme (FFTP)

Various elements of capacity building:-

- Education on disaster prevention and response.
- Training to vulnerable communities
- Collaboration with Relief agencies.
- Mock drill
- Household preparation.
- Understanding warning / do warning messages.
- First ~~and~~ aid prepare dress.

g) Disaster Risk:

Basically, RISK = HAZARD x VULNERABILITY

- Disaster risk is the livelihood of harmful consequences of loss (death, injuries, destroyed properties, economic activities (&) damaged environment) resulting from interaction between Hazards and vulnerable conditions.

$$\text{DISASTER RISK} = (\text{HAZARD} \times \text{VULNERABILITY}) / \text{CAPACITY}$$

h) How many seismic zones are there as per IS code? What are they?

A:- Based on the past seismic History,

Bureau of Indian standards grouped the Country into four seismic zones mainly: ① Zone II, ② Zone III, ③ Zone IV & ④ Zone V.

→ Out of all these four zones, Zone V is the most seismic active region. Whereas Zone-II is the least

Seismic zone	Intensity on MM scale
Zone II (low-Intensity zone)	6 (or less)
Zone III (Moderate Intensity zone)	7
Zone IV (Severe Intensity zone)	8
Zone V (Very severe Intensity zone)	9 (and above)

(2) Explain about how Disaster effects on Environment.

A: Disaster means a catastrophe, a mishap, a calamity or grave danger event occured in an area and affected life and properties.

- It may be arising from natural (or) man made causes, or by accident or due to negligence.

Impacts of disasters on Environment

- The impacts of disasters on environment and development ~~area~~ are manifold.
- Disasters create substantial environental degradation and ecological imbalance, hinder socio-economic development and retard the process of improving the quality of life of the people.
- The interaction of disasters and environment has both short-term & long-term Effects. These interactions work in a complicated way affecting people, ecosystem.

(3) write the difference between Hazard and Disaster? Also explain how hazard becomes a disaster.

A:- In ~~simple terms~~ differences, a hazard is a dangerous situation or event that carries a threat to humans.

- A disaster is a event that actually harms humans and disrupts the operations of society.
- Hazards will be considered disasters once they affect humans, but if they occur in an unpopulated area, they will remain hazards.

How does hazard becomes a disaster.

- A hazard becomes a disaster when it actualy occurs and when it occurs in such a way that people are harmed.
- For example
  - A hurricane is a natural hazard while it is at sea.
  - Thus a hazard becomes a disaster when it comes into contact with the

human work, killing people and causing damage to property.

(4) Explain about levels of disaster and types of disaster?

A:- Levels of disaster:-

There are four levels used to describe the severity of disasters.

Level I :- A small local disaster usually affecting one to thirty households which is within the capabilities of local community resources to handle.

Level II :- A medium-sized disaster usually affecting 40 to 150 households which is beyond the capabilities of local community resources to handle.

Level III :- These are large disasters in terms of severity or geography which cause significant damage and destruction and will usually receive a presidential declaration.

Level IV : A catastrophic disaster is defined by public Law 93-288 as "An event resulting in a large number of deaths and injuries. extensive damage (or) destruction of facilities.

Types of disasters

- Natural Disaster :-

Natural disasters are extremely unfortunate events with atmospheric geological and hydrological origins.

- Man-made disasters

Man-made disasters are caused by human action (or) inaction.

- Biological disaster :-

It can be caused by preserving and releasing germs of deadly diseases such as small pox, jaundice etc.

(5) What do you know about Hazard Assessment? Explain steps in Hazard Assessment?

A: These Studies Rely heavily on :-
available scientific information, including geologic, geomorphic and soil maps, climate and hydrological data.
Historical Information, both written, Reports and oral accounts from long-term residents.

Steps:-
- Quantitative approach.
- Qualitative approach.
- Deterministic approach.
- probablistic approach.

(6) Explain about Major diseases occured in Global, National and Local Level?

A:- Disasters can take many different forms, and the durations can range from forms an hourly disruption to days of weeks of ongoing

destruction .. Below is the list of various types of disasters - both natural and man-made (or) technological in nature - that can impact a community.

Natural types of disasters

Earthquakes, floods drought and water storage. Landslides, thunderstorms and lighting cloud burst, torradoes, Tsunamies.

Man-made and Technological types of disasters

Hazardous materials, power service disruption & blackout. Nuclear power plant and nuclear blast, radiological emergencies, chemical threat & biological weapons, cyber attacks, Explosion, civil unrest.

(7) Explain in detail about factors affecting vulnerability?

A:- Following are the factors affecting vulnerability.

- Education
- Building design
- Home preparation
- Building and settlement location.
- Vulnerability to flood hazards
- Vulnerability to Earthquake hazards.

- Education

Education is important in many ways. Firstly if you are educated you will probably have good job and good salary.

- Building design

If your house is built to latest earthquake-proof standards then you are less valnerable than someone living in an informal settlement.

- Home preparation

By preparing your home from hazards example screwing picture & furniture to the wall so they don't fall during earthquakes.

- Building & settlement location

Houses that are built on flat land & secure bed rock are going to make secure & less vulnerable than houses built on steep hills & unstable rocks

- Vulnerabilities to food hazards

Vulnerability is a term that can be used to cover many aspects of human side of the hazard Equation

Vulnerability = Exposure + Susceptibility − Resilience.

- Vulnerability to Earthquake hazard

The vulnerability of a region in case of Earthquakes is determined by the inventory of material assets. (buildings, infrastructure), ecological values & social structures as well as of the susceptibility of these objects to Earthquakes.

(8) Write about Vulnerability to Floods.

A:- Vulnerability is a term that can be used to cover many aspects of the human side of the hazard Equation.

- The flood hazard has a varied impact on people which is partly controlled by socio economic system they live in.
- Within a country or region some communities are more vulnerable than others. > within some communities individuals may be more (or) less vulnerable.
- Those who are most vulnerable to flood hazard may be unable to escape the risk due to limited resources (money, knowledge, work flexibility) etc.
- The UNESCO institute for water education has attempted to quantify flood vulnerability using following Eq:-

$$\text{Vulnerability} = \frac{\text{Exposure} + \text{susceptibility}}{\text{resilience}}.$$

DISASTER MANAGEMENT

Assignment -1

M. Vaishnavi
212410 2007
Mtech I - II sem.

1. Briefly explain the following terms

a. Disaster

Disasters are serious disruptions to the functioning of a community that exceed its capacity to cope using its own resources. Disasters can be caused naturally, man-made and technological hazards, as well as various factors that influence the exposure and vulnerability of a community.

b. Disaster management

Disaster management isn't about ~~reduce~~ stopping disasters, rather it is about reducing the impact of these events on a company or community. Diasoter management covers a whole range of events, including communication features, public disorder, terrorism, natural disasters and artificial disasters like electrical fires and industrial sabotage.

c. Factors affecting disaster management are:

1. Economic condition.
2. Positive thinking
3. Spirit of cooperation.
4. Population density.
5. Social honesty and faith
6. Geographical conditions.
7. Availability of the means of transport and communication.

d. Hazard

A. Hazard is any object, situation, or behavior that has the potent-ial to cause injury, ill health, or damage to property or the environment.

e. Vulnerability

The characteristics determined by physical, social, economic and environmental factors or processes which increase the susceptibility of an individual, a community, assets or systems to the impacts of hazards.

4. capacity (or) capacity building

A combination of all the strengths and resources available within a community, society or organization that can reduce the level of risk, or the effects of a disaster.

9. Disaster risk

The potential loss of life, injury, or destroyed or damaged assets which could occur to a system, society or a community in a specific period of time, determined probabilistically as a function of hazard, exposure, vulnerability and capacity.

h. Different zones in India,

There are 4 zones in India, Earthquake zones.

1. Zone - II
2. Zone - III
3. Zone - IV
4. Zone - V

2. Disaster effect on Environment

Disasters are not random and do not occur by accident. They are the convergence of hazards and vulnerable conditions. Disasters not only reveal underlying social, economic, political and environmental problems, but unfortunately contribute to worsening them. Such events pose serious challenges to development, as they erode hard-earned gains in terms of political, social and educational progress, as well as infrastructure and technological development.

Disasters create substantial environmental degradation and ecological imbalance, hinder socioeconomic development and retard the process of improving the quality of life of the people.

3. Hazard

	Disaster
1. A dangerous situation that poses a threat to human life.	An event that completely causes damage to human life and property.
2. Has less critical consequences	Has more critical consequences and more catastrophic.
3. Take its full shape after a series of events, which might have led it to happen	often happens in a short time, causing more severe effects.

A hazard become a disaster when it actually occurs and when it occurs in a such a way that people are harmed., for example, a hurricane is a natural hazard while it is at sea. Thus a hazard become a disaster when it comes in contact with human world, killing people and causing damage to property.

4. Types of disasters

1. Water and climate disaster (Natural disaster)

Flood, hail strom, cloud burst, cyclones, heatwaves, cold waves, droughts hurricanes.

2. Geological Disaster.

Landslides, earthquare, volcanic eruptions, tornadocs.

3. Biological Disaster

Viral epidemics, pest attacks, cattle epidemic, and locust plagues

4. Industrial disaster

chemical and industrial accidents, mine shaft fires, oil spills.

5. Nuclear disaster

Nuclear core meltdowns, radiation poisoning.

6. Man-made disaster

Urban and forest fires, oil spill, the collapse of huge building structures

5. Hazard Assessment Mean

A hazard assessment is a procedure designed to identify, assess, and manage health risks and safety hazards in the workplace. It also recommends appropriate safety measures to use to mitigate the identified hazards.

6. Natural Disasters.

1. Bushfires, Australia (2019-2020)
2. Flash Floods, Indonesia -(2020.)
3. Covid-19, China and all over the world (2019-2020).
4. Volcano Eruption, Philippines -(2020)
5. Swarms of Locusts, Asia - East Africa - India - Middle East (2020)
6. Forest fires, Uttarakhand - (2020)
7. Assam Floods, India (2020)
8. Hyderabad floods.

7. Factors affecting vulnerability

- Poverty
- Livelihood
- Cultural beliefs
- Equity
- Gender
- Weaker social groups.

8. Vulnerabilities to earthquake and Floods.

Vulnerability is an essential element for defining disaster impacts and their collective threat to people. Floods, droughts, cyclones, earthquakes and landslides have been recurrent phenomena in India, which makes it traditionally vulnerable to natural disasters. Its unique geo-climatic conditions widen the scope of such natural catastrophes that cause great damage or loss of life.

It is about the degree of potential damage to which an individual, a community, assets or system is/are exposed under the conditions determined by physical, social, economic and environmental ~~fac~~ factors or processes depending on types of disaster, no matter if they are not natural or common.

Disaster Management
Assignment-2

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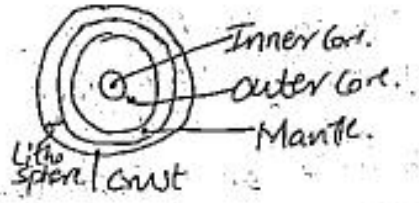
1. Explain about the earthquakes and also identify the influence on ecosystem?

Ans: **Earthquake:** It is an intense shaking of earth's surface. The shaking is caused by movements in earth's outermost layer.

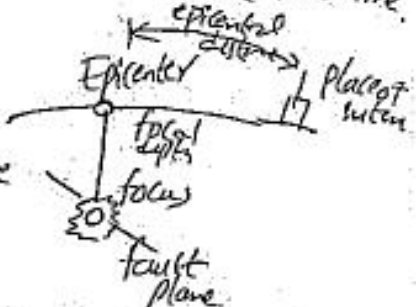
Occuring of Earthquake:

- The Earth is made of four basic layers: a solid crust, a hot nearly solid mantle, a liquid outer core & a solid inner core.



- The solid crust & top, stiff layer of the mantle make up a region called the lithosphere.
- The lithosphere is not a continuous piece that wraps around the whole Earth like an egg shell. It's actually made up of giant puzzle pieces called tectonic plates.
- Tectonic plates are constantly shifting as they drift around the viscous, or slowly-flowing, mantle layer below. This nonstop movement causes stress on earth's crust
- When the stresses get too large, it leads to cracks called faults. When the tectonic plates move it also cause movements at the faults.
- An Earthquake is the sudden movement of earth's crust at a fault line.

Terminology of Earthquake:



Focus (or) Hypocenter: point within the earth from where Seismic waves originate.

Focal depth: It is vertical distance between the Epicenter & Hypocenter.

Epicenter: point on earth's surface vertically above the place of origin of an earthquake.

Fault plane: It is weak point within a tectonic plate where pressure

from beneath the surface can break through and causing shak
Earth's surface.

Magnitude: quantity to measure the size of an Earthquake in terms
its energy & independent of place of observation.

Ritcher scale: Magnitude is measured in Ritcher scale units

Intensity: Rating of effects of an earthquake at a particular place
based on the observations of the affected areas, using a descriptive scale
like Modified Mercalli Scale.

Seismology: Study of earthquakes.

Seismometer: Instrument that detects the intensity, direction & duration of
earthquakes.

Seismograph: when the earth trembles, this device takes the readings produ
by seismometer & produces a seismogram.

Influence of earthquake on ecosystem:

- The immediate environmental impacts
  - Land slides & Avalanches
  - Forest & Biodiversity loss
  - Change on hydrological cycle
  - Solid waste & hazardous materials.

2. Explain about floods? Identify the harmful effects of floods?

Flood is a state of high water level along a river channel & on the coast that leads to inundation of land, which is not usually submerged.

- Floods can form where there is no stream, as for example when abnormally heavy precipitation falls on flat-terrain at such a rate that the soil cannot absorb the water & the water cannot runoff as fast as it falls.
- Floods are caused not only by rain but also by human changes to the surface of the earth. Farming, deforestation & urbanization increase the runoff from rains; thus storms that previously would have caused no flooding today inundate vast areas.

Adverse effects of floods:

- The most important consequences of floods is the loss of life and property. Structures like houses, bridges, roads etc. get damaged by the gushing water.
- Boats & fishing nets also get damage & huge loss of life & livestock caused by drowning.
- Lack of proper drinking water facilities, contamination of water leads to outbreak of epidemics.
- Huge loss of large area of agricultural land getting inundated. This results in shortage of food, & animal fold.
- Floods may also affect soil characteristics. The land may be rendered infer due to erosion of top layer & may turn saline if sea water floods the area.

3. Classify droughts interms of impact & also mention its impact on economy, Environmental & social levels?

Ans: Impacts of drought are classified as below.

i) Economic impacts
ii) Environmental impacts
iii) social impacts.

- Droughts have been classified into 3 categories interms of impact.

i) meteorological drought
ii) hydrological drought
iii) Agricultural drought

Economic impacts:

- production losses in agriculture & related sectors, especially forestry & fisheries.
- It causes a loss of income & purchasing power, particularly among farmers & rural population dependent on agriculture.
- All industries dependent upon the primary sector for their raw materials would suffer losses due to reduced supply & increased prices.

Environmental Impacts:

- lower water levels in reservoirs, lakes & ponds as well as reduced

flows from springs & streams would reduce the availability of feed drinking water.
- Loss of forest cover, mitigation of wildlife & their greater mortality due to increased contact with agricultural producers.
- Approloyed drought may also result in increased stress.
- Reduced stream flow & loss of wetlands may cause changes in the levels of salinity.

Social impacts:
- Lack of income causes out mitigation of the population from the drought affected areas.
- people withdraw their children from schools & sell their assets such as land & cattle.
- Inadequate food intake may lead to malnutrition & deaths, cause stress which could be socially very disruptive.
- Access & use of scarce water resources generate situations of conflict, which could be socially very disruptive.

4) What is Eco-system? What are factors contributing the destruction of ecosystem?
- Ecosystem is a geographic area where plants, animals & other organisms as well as weather & landscape, work together to form a bubble of life.
- Ecosystems contain biotic (living) parts as well as abiotic factors (non living parts).
- Types of ecosystem are.
  i) Forest ecosystem
  ii) Grassland ecosystem
  iii) Tundra ecosystem
  iv) Desert ecosystem
- Ecosystems are the foundation of biosphere & maintain the natural balance of the earth.
- World ocean is the largest existing ecosystem on our planet. Covering 71% of earth's surface, it's a source of livelihood for over 3 billion people.

Factors responsible for destruction of ecosystem:

- Pollution (Main factor)
- Climate change
- Land clearing
- Resource Exploitation
- Population Decline.

5. Explain about the industrial accidents with suitable examples and the repercussions of the same on the human life.

List of some major industrial accidents in the last 10 years in India

- LG polymers, Visakhapatnam (7 dead) – Styrene gas leaked from plant
- Delhi factory fire (43 dead) – A huge fire broke out in a factory
- NTPC power plant Explosion (40 dead) (2017) – Explosion at 500 MW unit of coal fired power plant
- Sivakasi fire cracker factory (40 dead) – Chemical reaction b/w ingredients used in manufacture of crackers.
- Indian Oil Corporation Jaipur (12 dead)
  – A huge tank with capacity of 8,000 Kilometers of petrol at IOCL

6. Discuss about the Land slides?

– A land slide is a downward & outward movement of soil, rock & vegetation, under the influence of gravity.

– Resisting force (R) preventing the mass from sliding down the slope ex inversely proportional to the same hill slope angle and directly proportional to the friction angle of the material.

– Land slides occur when gravitational + other types of shear stresses with in a slope exceed the shear strength (resistance to shearing) of the material that form slope.

Causes of land slides:

Natural factors

i) Gravity

ii) Geological factors:

– Heavy & prolonged rainfall
– Earthquakes
– volcanoes.

- waves

Types of landslides:

i) Fall
ii) Topple
iii) Slide
iv) Flow
v) spread
vi) Slump
vii) Creep

7) How manmade disasters can be minimised?

- These risks can be reduced by
- locating hazardous sites and materials away from centres of population.
- Awareness, training is must ~~of~~ Early Alarm system
- Nuclear wars can be prevented by getting rid of the nukes & maintain good healthy relationships all around the world.
- Global warming can supposedly be prevented by making carbon Dioxide the world's number one enemy.
- For fires, you could remove dead/dry vegetation, add plants that are wild to dry conditions of this environment, Controlled fire setting dry patches of dead vegetation.

8) write a note on volcanoes. What are hazards involved?

- Volcano refers to eruption of hot molten lava from below the surface of earth.
- A volcano is a vent in the earth's crust through which lava, steam, ashes etc. are expelled.

Formation of Volcanoes:

- When tectonic plates collide and go through the process of subduction, it sets the foundation for a volcano.
- The overlapping of the tectonic plates causes the magma to break through the crust, which is the cause of a volcanoes' birth.

- When the temperature rises the rock melts and moves through the surface + crust, and releases gases + magma, volcanic eruption occurs.

Effects of Volcanic Eruption:

- The effects can be divided into primary + secondary effects.

primary effects of a volcanic eruption are volcanic gases, Lava flows, pyroclastic flows

Secondary effects of a volcanic eruption are lahars, landslides and flooding.

- other secondary effects include: Food/water supply interrupted, homelessness, Business forced to close, cost of insurance claims, unemployment, long-term issues with the tourism industry.

9. What is meant by human ecology? How it is related to disasters?

Human ecology is the study of the interactions between human and non-human nature in different cultures.

- Human ecology combines the ideas + methods from the several disciplines including anthropology, sociology, biology, economic history and archeology

Eg: destruction of marine animals by commercial fishing.

- Human ecology analyses the consequences of human activities as a chain of effects through the ecosystem + human social system.

- Types are Urban morphology and landscape ecology.

Human ecology related to disasters:

- Human well-being depends on ecosystems that provide multiple livelihood benefits. They also increase the resilience of vulnerable people to withstand, cope with + recover from disasters resulting from hazard events such as droughts, hurricanes, earthquakes + others

- Some unique threats are snow & ice avalanches + glacial like outburst floods.

10. What is endogeneous hazards? Explain with examples?

Endogeneous forces originate with in the earth.

- Volcanism + earthquakes occur as a result of endogeneous forces.
- Endogeneous hazards are which originate inside the surface of the earth termed as endogenic.

Eg: Volcanic eruption

Earthquakes

Disasters of volcanoes

Landslides

Hazardous effects of volcanic eruptions.

Distribution of earthquakes and Causes of it.

Environmental impacts of volcanic eruptions.

Causes + distribution of volcanic eruptions.

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1) Explain about the earthquakes and also identify its influence on ecosystem.

A) Earthquakes :-

* An earthquake is the result of a sudden release of energy in the Earth's crust creates seismic waves. At the Earth's surface, earthquakes manifest themselves by vibration. shaking and sometimes displacement of the ground.

* The vibrations may vary in magnitude. Earthquakes are caused mostly by slippage within geological faults, but also by other events such as volcanic activity, landslides, mine blasts, and nuclear tests.

* The underground point of origin of the earthquakes is called the focus. The point directly above the focus on the surface is called the epicentre.

* Earthquakes by themselves rarely kill people or wildlife. It is usually the secondary events that they trigger, such as building collapse, fires, tsunamis (seismic sea waves) and volcanoes that are actually the human disaster.

* Many of these could possibly be avoided by better construction, safety systems, early warning and planning.

Adverse effects of earthquake :-

* Damage occurs to human settlement, buildings, structures and infrastructure, especially bridges, elevated roads, railways, water towers, pipelines, electrical generating facilities.

* Aftershocks of an earthquake can cause much greater damage to already weakened structures.

* secondary effects include fires, dam failure and landslides which may block water ways and also cause flooding.

*Damage may occur to facilities using or manufacturing dangerous materials resulting in possible chemical spills.

*There may be also be a breakdown of communication facilities.

*There are large number of casualties because of the poor engineering design of the buildings and close proximity of the earthquake is because of the building collapse.

*There is also a huge loss to the public health system, transport and communication and water supply in the affected areas.

2) Explain about floods? identify the harmful effects of floods?

A) Floods :-

*floods have ravaged portions of India from times immemorial. Though floods are one of the very few well recorded natural phenomena, the catastrophic damages caused by them attracted focussed attention in recent decades.

*with increasing population pressure and accelerated economic development, the adverse effects of floods are being increasingly felt now. floods cause great distress whenever they damage crops and property and endanger lives.

*the term flood is generally defined as a relatively high flow or stage in a river and title inundation of low land which might result therefrom. In a broader sense the term flood is also used to convey all outflow due to jamming or blocking of rivers by landslides and inadequate drainage to carry away surface water speedily.

*In essential terms, flood denotes imbalance between the inflow and outflow of water. Hence, areas are stated to be flooded when water due to rainfall and/or river spill is unable to drain off within a

community, floods also bring about significant geomorphological changes in river channels, flood plains and coastal areas. Often, floods change land forms through the processes of erosion shifting and sedimentation.

3) Classify the droughts in terms of impact and also mention its impact on economic, environmental and social levels?

A) * Droughts have been classified into three categories in terms of impact.

(i) Meteorological drought

(ii) Hydrological drought

(iii) Agricultural drought

Impacts of Drought :-

(i) Economic impacts :-

* production loses in agriculture and related sectors, especially forestry and fisheries.

* It causes a loss of income and purchasing power, particularly among farmers and rural population dependent on agriculture

* All industries dependent upon the primary sector for their raw materials could suffer losses due to reduced supply or increased prices.

(ii) Environmental impacts :-

* Lower water levels, in reservoirs, lakes and ponds as well as reduced flows from springs and streams would reduce the availability of feed and drinking water and adversely

quick span of time. strictly, this type of situation is a drainage congestion problem.

*Mostly often drainage from apart of floods and the terms flood is often used to describe either type of situations.

* In India vast stretches of land are submerged under water and other adverse effects are caused, such as destruction or damage to houses, property, bridges road and other means of communications, lives lost etc- year after year. Dense population, weak infrastructure and rapid urbanization aggravate the problem.

Adverse effects of floods :-

* All over the world, and throughout history, natural disasters have imposed human suffering and extracted heavy toll of losses. Recent instances have revealed that it is not merely the developing countries that have so suffered.

* The loss in some of the highly developed Nations in mind boggling not with standing the high standards countries that have so suffered.

* Apart from the casualties, injuries and disablement, many sections of the population get affected by floods. cropped areas gets submerged, eroded and strewn with sand leading to loss of crop production and consequential disruptions. Many houses are destroyed completely, others are damaged.

* Damage and loss to public and private utilities and industrial disruptions occurs. Breakdown of economic activities occurs with corresponding loss of wealth.

* Apart from these adverse socioeconomic impacts on the affected

affect fish and wildlife habitat

* Loss of forest cover, migration of wildlife and their greater mortality due to increased contact with agricultural producers.

* A prolonged drought may also result in increased stress among endangered species and cause loss of biodiversity.

* Reduced stream flow and loss of wetlands may cause changes in the levels of salinity.

* Increased groundwater depletion, land subsidence, and reduced recharge may damage aquifers and adversely affect the quality of water.

* The degradation of landscape quality may lead to a more permanent loss of biological productivity of the landscape.

(iii) Social impacts :-

* Lack of income causing out migration of population from the drought-affected areas.

* People withdraw their children from schools and sell their assets such as land or cattle.

* Inadequate food intake may lead to malnutrition, and in some extreme cases, cause starvation.

* Access and use of scarce water resources generate situations of conflict, which could be socially very disruptive.

4) What is eco-system? What are the factors contributing to the destruction of eco-system?

A) Eco-system :- An ecosystem is a geographic area where plants, animals, and other organisms, as well as weather and landscape,

work together to form a bubble of life.

Destruction of Eco-system:-

Initially, these disasters negatively affect the biodiversity of wetlands, forests and coastal systems by causing the spread of invasive species, mass species mortality and loss of habitat.

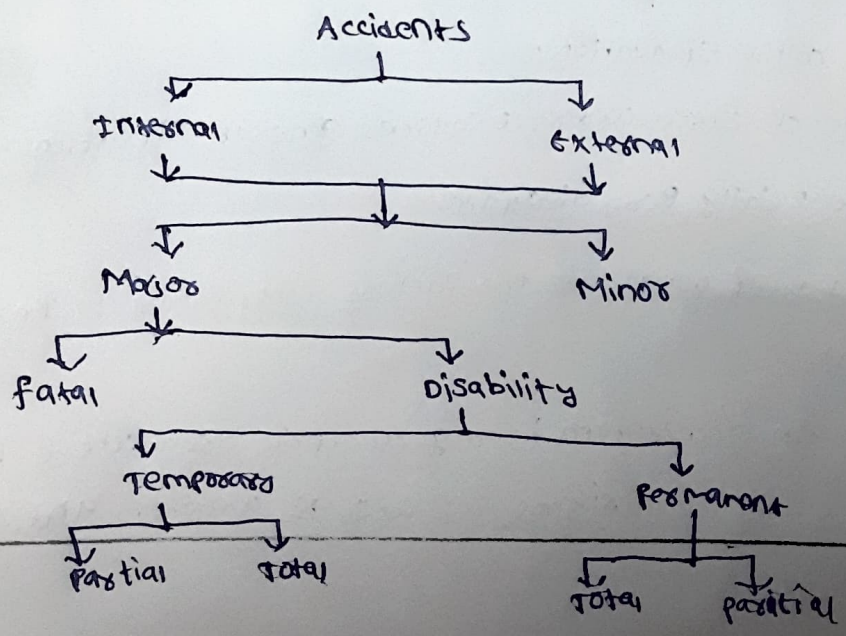
Environmental degradation is the deterioration of the environment through depletion of resources such as air, water and soil; the destruction of ecosystems; habitat destruction; the extinction of wildlife; and pollution. When natural habitats are destroyed or natural resources are depleted, the environment is degraded.

5) Explain about the industrial accidents with suitable examples and the repercussions of the same on the human life.

A) Industrial Accident:-

An accident (industrial) is a sudden and unexpected occurrence in the orderly progress of the work.

Types of industrial accidents:-



Causes of Accidents:-

* The industrial safety experts have classified the various causes of accidents into three broad categories :-

(i) Unsafe conditions (work-related) :-

* Unsafe working conditions are the biggest cause of accidents. These are associated with defective plants, tools, equipments, machines, and materials. Such causes are known as 'technical causes'. They arise when there are improper guarded equipments, defective equipments, faulty layout and location of plant, inadequate lighting arrangements and ventilation, unsafe storage, inadequate safety devices etc.

* Besides, the psychological reasons such as working overtime, monotony, fatigue, tiredness, frustration and anxiety are also some other causes that cause accidents. safety experts identify that there are some high danger zones in an industry. Those are, for example, hand lift trucks, wheel-barrows, gears and pulleys, saws and hand tools, chisels and screw drivers, electric drop lights etc., where about one-third of industrial accidents occur.

(ii) Unsafe Acts :-

* Industrial accidents occur due to certain acts on the part of workers. These acts may be the result of lack of knowledge or skill on the part of the workers, certain bodily defects and wrong attitude.

Examples of these acts are:-

(a) operating without authority.

(b) failure to use safe attire or personal protective equipments.

(c) careless throwing of material at the work place

(d) working at unsafe speed, i.e, too fast or too low.

(e) using unsafe equipments, or using equipments unsafely.

(f) removing safety devices.

(g) taking unsafe position under suspended loads..

(h) Distracting, teasing, abusing, quarrelling, day-dreaming, horse play.

(i) one's own accident Proone personality and behaviour.

(iii) Other causes:-

* These causes arise out of unsafe situational and climatic conditions and variations. These may include excessive noise, ~~glare, dust~~ high temperature, humid conditions, bad working conditions, unhealthy environment, slippery floors, excessive glare, dust and fume, arrogant behaviour of domineering supervisors etc.

* ~~Of late~~, industrial accidents have become common happening in our country. ~~A brief catalogue of major accidents in the recent past in~~ India:

6) Discuss about the landslides.

A) * A landslide is the movement of rock, earth, or debris down a sloped section of land.

* Landslides are caused by rain, earthquakes, volcanoes or other factors that make the slope unstable.

* Geologists, scientists who study the physical formations of the earth, sometimes described landslides as one type of mass wasting.

* A mass wasting is any downward movement in which the

Earth's surface is worn away. Other types of mass wasting include rockfalls and the flow of shore deposits called alluvium.

* Near populated areas, landslides present major hazards to people and property.

* Landslides have three major causes (i) geology, (ii) morphology and (iii) human activity.

* Types of Landslides :-

* there are many ways to describe a landslide. The nature of a landslide's movement and the type of material involved are two of the most common.

* Landslide movement :- There are several ways of describing how a landslide moves. These include falls, topples, translational slides, lateral spreads, and flows.

* Landslide material :- A landslide can involve rock, soil, vegetation, water, (or) some combination of all these.

* Speed of movement :-

- Some landslides move at many meters per second, while other creep along at an centimeter or two a year.
- The amount of water, ice, (or) air in the earth should also be considered.
- Some landslides include toxic gases from deep in earth expelled by volcanoes.
- Some landslides, called mud slides, contain a high amount of water and move very quickly.
- complex landslides consist of a combination of different material (or) movement types

7) How man-made disasters can be minimised?

A) Man-made environmental disasters are a significant, continuing public health risk. However, risks can be reduced by,

* Locating hazardous sites and materials away from centres of population.
* A safe environmental health structure, to ensure, eg. clean, uncontaminated drinking water.
* Pilot studies and the taking of independent environmental health advice before making potentially hazardous changes.
* Agreeing, monitoring and enforcing environmental health policies.
* Rapid effective remedial action in the event of a disaster, to minimize longer term risks and knock on effects on health.

8) Write a brief note on Volcanoes. What are the hazards involved?

A) Volcanoes :-

* A volcano is an opening in a planet or moon's crust through which molten rock, hot gases, and other materials erupt.
* Volcanoes often form a hill or mountain as layers of rock and ash build up from repeated eruptions.
* Volcanoes are classified as active, dormant, and extinct.
* Active volcanoes have a recent history of eruptions, they are likely to erupt again.
* Dormant volcanoes have not erupted for a very long time but may erupt at a future time.
* Extinct volcanoes are not expected to erupt in the future.

Hazards involved in volcanoes :-

* volcanoes produce a variety of hazards, depending on the chemical composition and gas content of the lava (as well as on other factors):

(i) Lava
(ii) Pyroclastic flows
(iii) Phreatic explosion
(iv) Lahars
(v) Jokulhlaups
(vi) Landslides
(vii) volcanic earthquakes
(viii) Tsunamis
(ix) volcanic gases
(x) Tephra.

Q) what is meant by human ecology? How it is related to disasters?

A) Human ecology :-

* The study of the relationships between humans and their environments, is a field with a large scope and complex history.

* It arose out of multiple disciplines - animal biology, anthropology, geology, ecology and sociology.

Disasters :-

10) what is endogenous hazards? Explain with examples in detail.

A) endogenous hazards :- Endogenous forces originate within the Earth. Volcanism and earthquakes occur as a result of endogenous forces. examples of volcanic hazards include lava flows, tephra and ash fall, lahars, glacial outburst floods (jokulhlaups), and poisonous gases emitted during volcanic eruptions