SRM VALLIAMMAI ENGINEERING COLLEGE

(An Autonomous Institution)

SRM Nagar, Kattankulathur – 603 203.

DEPARTMENT OF CIVIL ENGINEERING

QUESTION BANK

VI SEMESTER

1903612 - DISASTER MANAGEMENT

Regulation – 2019

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Prepared by

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SUBJECT: 1903612 - DISASTER MANAGEMENT

SEM / YEAR: VI / III

UNIT I INTRODUCTION TO DISASTERS				
Definition: Disaster, Hazard, Vulnerability, Resilience, Risks – Disasters: Types of disasters – Earthquake, Landslide, Flood, Drought, Fire etc - Classification, Causes, Impacts including social, economic, political, environmental, health, psychosocial, etc.- Differential impacts- in terms of caste, class, gender, age, location, disability - Global trends in disasters: urban disasters, pandemics, complex emergencies, Climate change- Dos and Don'ts during various types of Disasters.				
PART – A				
Q.No	**Questions**	**BT Level**	**Competence**	**Course Outcome**
1.	What is a Disaster?	1	Remember	CO1
2.	What is a Pandemic?	1	Remember	CO1
3.	List out the don'ts of Earthquake	1	Remember	CO1
4.	Define famine.	1	Remember	CO1
5.	Name the categories of disasters.	1	Remember	CO1
6.	What is disaster preparedness?	1	Remember	CO1
7.	Explain the agencies involved in the disaster management?	2	Understand	CO1
8.	List the types of natural disaster.	2	Understand	CO1
9.	Summarize the different types of disaster.	2	Understand	CO1
10.	Demonstrate about blizzards?	2	Understand	CO1
11.	Differentiate between hazard and risk.	3	Apply	CO1
12.	What is a limnic eruption?	3	Apply	CO1
13.	Identify the types of vulnerability	3	Apply	CO1
14.	Define avalanche. List out three parts of avalanche.	4	Analyse	CO1
15.	How to determine snow pack is safe.	4	Analyse	CO1
16.	What is mean by flash flood.	4	Analyse	CO1
17.	Compare hazards and vulnerability.	5	Evaluate	CO1
18.	Describe about disaster resilience.	5	Evaluate	CO1
19.	Discuss about global trends in climate change.	6	Create	CO1
20.	Compile about drought.	6	Create	CO1
PART – B				
1.	i. Describe various disaster preparedness strategies. (8) ii. Explain the development plans adopted in disaster	1	Remember	CO1

	management. (5)			
2.	Define mining and explain methods of extraction.	1	Remember	CO1
3.	What are the different types of natural disasters? Explain in detail.	1	Remember	CO1
4.	What is to be done during and after the earthquake.	1	Remember	CO1
5.	Draw the disaster management cycle and explain every stage in it.	2	Understand	CO1
6.	Disaster impacts differential groups at various levels. Justify.	2	Understand	CO1
7.	i. Explain the risk sharing process in disaster mitigation. (7) ii. Describe the goal and objective of ISRD programme. (6)	2	Understand	CO1
8.	Describe terrorism and write down the typology of terrorism.	3	Apply	CO1
9.	Describe flood and explain the causes of flood.	3	Apply	CO1
10.	Explain the techniques of reducing oil fire.	4	Analyse	CO1
11.	Explain the causes, classification and types of forest fire.	4	Analyse	CO1
12.	Explain the types of drought and drought preparedness with Mitigation.	4	Analyse	CO1
13.	List the Do's and Don'ts during various types of Disasters.	5	Evaluate	CO1
14.	Define earthquake and explain in detail about the types, causes and preventive measures of earthquake.	6	Create	CO1
	PART – C			
1.	What are flash floods? Explain about one recent flash flood that affected large population of a region in India.	6	Create	CO1
2.	What is smog? What are the various reasons for the presence of smog in the northern region of lndia during the month of November?	5	Evaluate	CO1
3.	What are the causes for the Tsunami 2004 which inflicted heavy loss to life and property along the coast of Tamil Nadu? Specify its epicenter and magnitude.	5	Evaluate	CO1
4.	Explain in detail about the global trends in disasters.	6	Create	CO1

UNIT II APPROACHES TO DISASTER RISK REDUCTION (DRR)				
Disaster cycle - Phases, Culture of safety, prevention, mitigation and preparedness community based DRR, Structural – non-structural measures, Roles and responsibilities of- community, Panchayati Raj Institutions/Urban Local Bodies (PRIs/ULBs), States, Centre, and other stakeholders - Institutional Processes and Framework at State and Central Level - State Disaster Management Authority (SDMA) – Early Warning System – Advisories from Appropriate Agencies.				
PART – A				
Q.No	**Questions**	**BT Level**	**Competence**	**Course Outcome**
1.	What is a disaster management cycle?	1	Remember	CO2
2.	Define disaster risk reduction.	1	Remember	CO2

3.	List the phases of disaster life cycle.	1	Remember	CO2
4.	What is mitigation?	1	Remember	CO2
5.	Why are the mitigation activities necessary?	1	Remember	CO2
6.	Outline few points on the preparedness for disaster risk reduction.	1	Remember	CO2
7.	Illustrate the goals of preparedness activities.	2	Understand	CO2
8.	Explain the response activities for DRR.	2	Understand	CO2
9.	Summarise the constituents of response activities	2	Understand	CO2
10.	Explain recovery with its types.	2	Understand	CO2
11.	Develop the term culture of safety	3	Apply	CO2
12.	Build the structure of Pachayati Raj system.	3	Apply	CO2
13.	Write down the types of Urban local bodies.	3	Apply	CO2
14.	Construct the responsibilities of NDMA.	4	Analyse	CO2
15.	List the functions of NIDM.	4	Analyse	CO2
16.	Conclude on International Strategy for disaster management.	5	Evaluate	CO2
17.	Describe early warning system with suitable examples.	5	Evaluate	CO2
18.	Compile the types of early warning systems.	5	Evaluate	CO2
19.	Discuss the stages in disaster risk reduction.	6	Create	CO2
20.	Discuss the roles and responsibilities of NDMA.	6	Create	CO2
PART – B				
1.	What are the key components of disaster management? Explain in detail.	1	Remember	CO2
2.	Write a brief note on cultural safety in disaster risk reduction.	1	Remember	CO2
3.	How the structural and non-structural components are used in risk reduction strategies? Explain.	1	Remember	CO2
4.	Explain the roles and responsibilities of various agencies in disaster mitigation and management.	2	Understand	CO2
5.	Explain the roles and responsibilities of Panchayati Raj Institution.	2	Understand	CO2
6.	Give an outline on Urban Local Bodies in India	2	Understand	CO2
7.	Write a short note on the concept of Panchayati Raj and also explain its structure.	3	Apply	CO2
8.	Develop the stages of disaster risk reduction and explain in detail.	3	Apply	CO2

9.	Write a brief note on early warning system.	3	Apply	CO2
10.	Analyse and write a brief note on SDMA.	4	Analyse	CO2
11.	List any three advisories from appropriate agencies, Explain in detail.	4	Analyse	CO2
12.	Assess in detail on the four basic elements and types of early warning systems.	5	Evaluate	CO2
13.	Develop the conceptual framework for disaster risk reduction.	6	Create	CO2
14.	Write a case study on disaster risk reduction in India.	6	Create	CO2
PART – C				
1.	Consider Bhopal gas disaster as a case study. Explain the applicable principles of disaster management to mitigate the effect of such disaster in future.	4	Analyse	CO2
2.	Evaluate the risk reduction strategies followed by the Government of India during the times of disaster.	5	Evaluate	CO2
3.	What are the fundamental underpinnings of disaster risk management?	1	Remember	CO2
4.	Explain on the public awareness and public education for disaster risk reduction.	6	Create	CO2

UNIT III INTER-RELATIONSHIP BETWEEN DISASTERS AND DEVELOPMENT

Factors affecting Vulnerabilities, differential impacts, impact of Development projects such as dams, embankments, changes in Land-use etc.- Climate Change Adaptation- IPCC Scenario and Scenarios in the context of India - Relevance of indigenous knowledge, appropriate technology and local resources.

PART – A

Q.No	Questions	BT Level	Competence	Course Outcome
1.	List down the factors that increase the intensity of disasters.	1	Remember	CO3
2.	Tell me the dimensions that challenge the human being in disaster.	2	Understand	CO3
3.	Explain the term “Displaced persons”.	1	Remember	CO3
4.	Infer how the available technology can play a large role in disasters.	4	Analyse	CO3
5.	Relate how the Land use change affects the society.	4	Analyse	CO3
6.	Describe about Land use change.	5	Evaluate	CO3
7.	Justify how climate changes affect the environment.	5	Evaluate	CO3
8.	How does a development activity create a disaster?	4	Analyse	CO3
9.	Define vulnerability in disaster management.	1	Remember	CO3
10.	What would result if there is any new development project?	3	Apply	CO3
11.	How will you describe about the negative consequences of building a new dam?	2	Understand	CO3
12.	Sketch the climate change adaptation cycle.	2	Understand	CO3
13.	Mention the environmental impacts of Land use changes.	4	Analyse	CO3

14.	Identify the activities of IPCC.	6	Create	CO3
15.	Expand and explain the term IPCC.	3	Apply	CO3
16.	Interpret the mitigation measures to overcome climate change.	3	Apply	CO3
17.	Define the climate change adaptation.	1	Remember	CO3
18.	Recall the different categories of indigenous knowledge disaster reduction.	2	Understand	CO3
19.	Mention the criteria required for appropriate technology.	1	Remember	CO3
20.	List down 3 factors that determine the vulnerability to climate changes as per IPCC.	1	Remember	CO3
	PART – B			
1.	Critically examine the various factors affecting vulnerability in disaster management.	2	Understand	CO3
2.	When can developmental activities become the cause of disasters?	2	Understand	CO3
3.	Explain and list the impact of development projects and embankments.	1	Remember	CO3
4.	Compile the impacts faced due to land use changes.	2	Understand	CO3
5.	Can you explain what happens in climate change adaptation.	1	Remember	CO3
6.	What do you mean by Land use change and how does it adversely affect the environment?	4	Analyse	CO3
7.	Explain the importance of indigenous knowledge. How is it helpful in disaster management?	4	Analyse	CO3
8.	i. Write a report about indigenous knowledge systems in Kerala. (6) ii. Using appropriate technology with local resources, mankind get benefitted. Justify this statement with an example. (7)	6	Create	CO3
9.	Recommend the mitigation measures to conserve agriculture, water supply and air quality due to climate change.	3	Apply	CO3
10.	Summarize the adoption of Kyoto Protocol in 1997.	3	Apply	CO3
11.	Brief about 5 assessment cycles and assessment reports delivered by IPCC.	1	Remember	CO3
12.	Comment about the climate adaptation cycle.	5	Evaluate	CO3
13.	Relate the relevance of indigenous knowledge in Disaster Risk reduction technological and economical aspect.	1	Remember	CO3
14.	Write in short about the effects of climate change on: i. Weather, (5) ii. Agriculture and Forest, (4) iii. Human Health. (4)	4	Analyse	CO3
	PART – C			
1.	Elucidate the important human factors that tend to influence disaster severity.	3	Apply	CO3
2.	Comment on the environmental and socio-economic impacts	5	Evaluate	CO3

	due to Land use changes.			
3.	Write in detail about the IPCC scenario in the context of India.	6	Create	CO3
4.	What is the role of IPCC towards climate change? Discuss in detail about its assessment cycles and reports.	5	Evaluate	CO3

UNIT IV DISASTER RISK MANAGEMENT IN INDIA

Hazard and Vulnerability profile of India, Components of Disaster Relief: Water, Food, Sanitation, Shelter, Health, Waste Management, Institutional arrangements (Mitigation, Response and Preparedness, Disaster Management Act and Policy - Other related policies, plans, programmes and legislation – Role of GIS and Information Technology Components in Preparedness, Risk Assessment, Response and Recovery Phases of Disaster – Disaster Damage Assessment.

PART – A

Q.No	Questions	BT Level	Competence	Course Outcome
1.	What is disaster relief?	1	Remember	CO4
2.	According to Planning Commission report, list the key vulnerabilities of India?	6	Create	CO4
3.	Tell in short about any one of technical disasters occurred in India.	1	Remember	CO4
4.	Indicate the nodal agencies designated by GoI for the early warning of different natural hazards.	4	Analyse	CO4
5.	Write a note on vulnerability profile on India.	2	Understand	CO4
6.	Discuss the major earthquake hazard zones in India.	4	Analyse	CO4
7.	What do you mean by the terms DANA and DALA?	1	Remember	CO4
8.	What do you mean by “capacity building”?	2	Understand	CO4
9.	Interpret the disaster management cycle as proposed by NDMA.	1	Remember	CO4
10.	Indicate the guidelines needed for Preparedness in case of any disaster.	3	Apply	CO4
11.	Tell the purpose of Initial Damage Assessment.	3	Apply	CO4
12.	Considering the pandemic due to CoViD-19, what would be the recovery measures?	3	Apply	CO4
13.	Mention about Disaster Management Act.	6	Create	CO4
14.	What are the steps involved in GIS for disaster management?	1	Remember	CO4
15.	Define the term Risk Assessment.	1	Remember	CO4
16.	Tell the objectives of disaster risk assessment.	4	Analyse	CO4

17.	Give the facts on the functions of National Authority of NDMA.	5	Evaluate	CO4
18.	Figure out the benefits of GIS in disaster management.	5	Evaluate	CO4
19.	Compile the four types of Damage Assessment	2	Understand	CO4
20.	List the uses of the information collected in the Detailed Sector Assessment.	2	Understand	CO4
PART – B				
1.	i. Recall natural hazard vulnerability in India. (8) ii. Discuss about the man-made vulnerable zones of India. (5)	1	Remember	CO4
2.	Identify the Landslide-prone regions of India and suggest some measures to mitigate the disasters caused by these.	6	Create	CO4
3.	Illustrate how the following facilities - Water, Food, Sanitation, Shelter, Health, Waste Management could be arranged aftermath of a disaster.	3	Apply	CO4
4.	Why there is a need for capacity building? Categorize its vital components.	4	Analyse	CO4
5.	State the constitution and role of National Disaster Response Force (NDRF) as per DM Act, 2005.	3	Apply	CO4
6.	Brief about the roles and functions of i. National Authority of NDMA. (7) ii. State Authority of SDMA. (6)	4	Analyse	CO4
7.	What is GIS? How this application helps in disaster management process?	1	Remember	CO4
8.	Summarize the risk assessment types and steps involved in it.	2	Understand	CO4
9.	Explain in detail about disaster management act, 2005.	1	Remember	CO4
10.	i. List the broad features of the National Policy on Disaster Management. (8) ii. In what ways the financial arrangements are facilitated for disaster mitigation? (5)	1	Remember	CO4
11.	How would you illustrate the role of National Disaster Management Authority in India?	2	Understand	CO4
12.	Develop how the risk information is used for Disaster Risk Management and explain about risk communication.	5	Evaluate	CO4
13.	State the risk assessment methodology.	5	Evaluate	CO4
14.	Justify why the recovery phase is essential after a disaster.	2	Understand	CO4
PART – C				
1.	Write about the evolution of Disaster Management in India and outline its structure and institutional framework.	5	Evaluate	CO4
2.	Illustrate in detail about the components of disaster relief.	2	Understand	CO4

3.	Justify the role of GIS Application and Information technology on analysing the Chennai Floods in 2015.	6	Create	CO4
4.	Elaborate the importance and categories of disaster damage assessment.	5	Evaluate	CO4

UNIT V DISASTER MANAGEMENT: APPLICATIONS AND CASE STUDIES AND FIELD WORKS

Landslide Hazard Zonation: Case Studies, Earthquake Vulnerability Assessment of Buildings and Infrastructure: Case Studies, Drought Assessment: Case Studies, Coastal Flooding: Storm Surge Assessment, Floods: Fluvial and Pluvial Flooding: Case Studies; Forest Fire: Case Studies, Man Made disasters: Case Studies, Space Based Inputs for Disaster Mitigation and Management and field works related to disaster management.

PART – A

Q.No	Questions	BT Level	Competence	Course Outcome
1.	What is a fluvial flood?	1	Remember	CO5
2.	List out the examples of man-made disaster?	1	Remember	CO5
3.	What are the steps to be taken by the residents during an earthquake in a residential building?	1	Remember	CO5
4.	List out the different types of floods?	1	Remember	CO5
5.	Define pluvial flood?	1	Remember	CO5
6.	List out any two recent natural disasters?	1	Remember	CO5
7.	Explain landslide hazard zonation?	2	Understand	CO5
8.	Summarize factors causing landslide?	2	Understand	CO5
9.	Summarize total risk with equations?	2	Understand	CO5
10.	List out the method of LHZ?	2	Understand	CO5
11.	Illustrate the data description of forest fire?	3	Apply	CO5
12.	Illustrate percentile Index in drought assessment?	3	Apply	CO5
13.	Explain SPI?	3	Apply	CO5
14.	Explain mitigation measures in drought assessment?	4	Analyse	CO5
15.	Explain mitigation measures in drought assessment?	4	Analyse	CO5
16.	Illustrate impact of earthquake?	4	Analyse	CO5
17.	Summarize the three levels of coastal flooding?	5	Evaluate	CO5

18.	Compare moderate and major of coastal flooding?	5	Evaluate	CO5
19.	Write the case study of man–made disaster?	6	Create	CO5
20.	Discuss the process of barometric setup in storm surge?	6	Create	CO5
PART – B				
1.	What are the Mitigation Measures for your home to prevent it from disaster?	1	Remember	CO5
2.	Describe any flooding disaster that occurred in India and write the various lessons that you have learned from it?	1	Remember	CO5
3.	What was the type of flood that affected Kerala recently? Critically evaluate the risk reduction strategies followed during the disaster?	1	Remember	CO5
4.	Explain in detail about methodology used in coastal flooding?	2	Understand	CO5
5.	Explain the working of various instrumentation used to measure earthquake?	2	Understand	CO5
6.	Describe the various intensity and magnitude of earthquake?	2	Understand	CO5
7.	Write in detail about earthquake vulnerability assessment and building and infrastructure?	3	Apply	CO5
8.	Expand and explain data description about forest fire?	3	Apply	CO5
9.	Illustrate the case study about forest fire in India?	3	Apply	CO5
10.	Brief about analysis for landslide hazard zonation?	4	Analyse	CO5
11.	Explain the role of GIS in LHZ?	4	Analyse	CO5
12.	What are the methodologies used in drought assessment?	5	Evaluate	CO5
13.	Access in detail about causes of man-made disaster?	5	Evaluate	CO5
14.	Write about storm and storm surge assessment?	6	Create	CO5
PART – C				
1.	Illustrate about earthquake vulnerability assessment of buildings and infrastructure with case study?	2	Understand	CO5
2.	Discuss in detail about drought assessment with case study?	4	Analyse	CO5
3.	Elaborate in detail about case study of storm surge?	5	Evaluate	CO5
4.	Write about LHZ with case study?	6	Create	CO5

Course Outcomes:

Cos	Course Outcome
CO1	Able to Differentiate the types of disasters, causes and their impact on environment and society
CO2	Able to assess factors of vulnerability and its impacts
CO3	Able to adopt various methods of risk reduction measures as well as mitigation.
CO4	Ability to draw the hazard and vulnerability profile of India, Scenarious in the Indian context.
CO5	Able to assess Disaster damage assessment and management