Code No: 09A60107 | R09 | SET-1

B. Tech III Year II Semester Examinations, April/May - 2012
URBAN DISASTER INTELLIGENT CONTROLS SYSTEMS
(CIVIL ENGINEERING)

Time: 3 hours **Max. Marks: 75**

Answer any five questions
All questions carry equal marks

1.a) List possible disasters both natural and manmade.
b) Where each type of disaster that you have listed is likely to occur and why?
c) How are Hazards classified? [15]

2.a) Distinguish between Hazard assessment and Risk assessment.
b) What are the environmental impacts of a disaster like fire in an Urban area?
c) List the Urban Policies which aims at limiting the adverse effects of such disasters. [15]

3.a) What are the technologies used to track Urban Disasters?
b) List the equipments used for monitoring advancement of Urban disasters like floods. What are the technologies used for engineering surveys to assess the disaster risk? Indicate the relative merits of the technologies you have listed. [15]

4.a) What are the issues involved in using Satellite technologies for Planning against disaster risk?
b) What are different geospatial technologies available to capture urban systems?
c) What type of sensors, other than Optical can be used for mapping spread of special types of disasters like fire? Explain with sketches? [15]

5.a) Explain the key role played by GIS in disaster reduction?
b) Give a typical flow chart of a Web enabled disaster mitigation system both for assessing and for communication and information dissemination.
c) List a few packages used for GIS indicating their relative merits. [15]

6.a) Distinguish between Decision Support System and Management Information System for Disaster application
b) Identify the components and the structure of a Disaster Management Decision Support System.
c) Explain the application of such a Decision Support System can be upgraded to a Group Decision Support System for managing a disaster at a higher level. [15]

7.a) What are the actions to be taken “post evaluation”?
b) Give an example of screening procedure to assess the damages during a Disaster taking the example of a major earthquake such as the one which occurred in Bhuj.
c) Based on such a screening indicate various relief measures that are organized to put the community on the road to development. [15]

8.a) Assuming that there is an impending Tsunami warning indicate at least six emergency steps that should be taken to safeguard the coastal community.

b) After tsunami is spotted by the buoy in the ocean, indicate step by step how that warning information reaches the public on the affected coast?

c) What is a Spatial Decision support System? Explain. [15]

--ooOoo--

Code No: 09A60107 | R09 | SET-2

B. Tech III Year II Semester Examinations, April/May - 2012
URBAN DISASTER INTELLIGENT CONTROLS SYSTEMS
(CIVIL ENGINEERING)

Time: 3 hours **Max. Marks: 75**

Answer any five questions
All questions carry equal marks
---

1. What are the steps required for bringing disaster risk reduction and development concerns closer together? What do you understand by Disaster Risk Index? Explain taking the example of earthquake damages which occurred in Gujarat. [15]

2. How is disaster risk related to Human Development Goals? What are the Urban Environmental Policies which will reduce the Disaster risk? How can these be assessed using modern technology? Take the example of drought and rain water harvesting and explain. [15]

3. Explain the role of digital Orthographic photo in Environmental disaster management application. Discuss the role of terrestrial scanners for surveys. [15]

4. In reducing the impact of urban disasters what is the role of GPS and satellite technology? Explain taking a specific example. [15]

5. Sketch and show a typical structure of an information system indicating the various components. Discuss the role of each components that you have sketched to disaster reduction. [15]

6. List a few Open Source and a few commercial GIS software that can be used for mapping and planning for risk reduction applications. Discuss in detail any one of the software application and use for risk reduction during flooding. [15]

7. What do you understand by Decision Support System? What type of Intelligent DSS you recommend for Risk reduction application. Discuss with examples. [15]

8. Write short notes on:
   a) Vulnerability Atlas
   b) Remedies for Land slide Hazard
   c) Cyclone tracking and prediction. [15]

--ooOoo--

Code No: 09A60107 | R09 | SET-3

B. Tech III Year II Semester Examinations, April/May - 2012
URBAN DISASTER INTELLIGENT CONTROLS SYSTEMS
(CIVIL ENGINEERING)

Time: 3 hours **Max. Marks: 75**

Answer any five questions
All questions carry equal marks
---

1. What are the economic impacts of disasters? How have the economic losses due to disasters varied in various countries of the world during the past decade? What lessons can we draw from this variation? [15]

2. List and explain Millennium Development Goals that will aid in disaster risk reduction. In an urban situation how fire accident risk can be mitigated by suitable environmental policies? [15]

3. What are the advantages of using Aerial photograph over satellite imagery for disaster management applications? Give specific example and explain. [15]

4. What are the methods of Satellite technology to find impact of urban disasters? What resolution you will get using Satellite technology currently. Indicate where you will obtain the data from and what are the impediments for getting the data? [15]

5. What do you understand by Management Information System? Sketch and show the relationships between various sub-systems of a Disaster Mitigation management System. Discuss the role of each sub-system you have identified. [15]

6. In what types or form the GIS data is available? Discuss the process in which the GIS can be implemented for disaster mitigation application. [15]

7. Discuss a few spatial data base management systems that can be used for risk reduction application. Can they be used for web application effectively for say Cyclone havoc mitigation work? Discuss. [15]

8. Write short notes on:
   a) Types of volcanoes
   b) Reducing Hazards and Risk posed by Volcano
   c) Where Volcanoes risk Lurk? [15]

--ooOoo--

Code No: 09A60107 | R09 | SET-4

B. Tech III Year II Semester Examinations, April/May - 2012
URBAN DISASTER INTELLIGENT CONTROLS SYSTEMS
(CIVIL ENGINEERING)

Time: 3 hours **Max. Marks: 75**

Answer any five questions
All questions carry equal marks
---

1. Indicate the global distribution of earthquake and cyclone hazard and its particular importance with respect to Asia Pacific region. What is Hazard mitigation? Give any three actions which you consider will mitigate the risk explaining the reason for such mitigation. [15]

2. What technologies can be used to forecast the impact of disasters? Explain taking the example of flooding of an urban area. What remedial measures can be taken to avoid adverse environmental impact? [15]

3. How are Unmanned Aircrafts useful in Disaster management applications? What are the advantages of using Unmanned Aircrafts over manned flights in such applications? [15]

4. What is GPS and how it is useful for managing disasters? In what way GPS based measurements and EDM surveys can compliment proper geographic mapping? [15]

5. What is meant by Decision Support System for Disaster Management? Discuss the three levels of hardware and software at which DSS can function. Taking the example of cyclone disaster show how you can build a DSS to support the disaster manager? [15]

6. What are the components of GIS which every GIS platform should have? Indicate the Hardware requirements of a working GIS platform indicating the function of each item. [15]

7. What do you understand by technology enabled online monitoring system and how it can help in disaster risk reduction? Taking the example of Tsunami risk on a coast after a severe far off earthquake show the components of such a technology enabled online system which will reduce the risk on the coast. [15]

8. Write short notes on:
   a) Plate tectonics
   b) Fault Types
   c) Main shock, Foreshock and Aftershock and their implications. [15]

--ooOoo—