Roll No. | | | | | | | | | | |

CONTROLLER OF EXAMINATIONS ADDITIONAL AU CHENNAI 600 025

ANNA UNIVERSITY (UNIVERSITY DEPARTMENTS)

B.E. /B.Tech / B. Arch (Full Time) - END SEMESTER EXAMINATIONS, NOV / DEC 2023

B.E.GEOINFORMATICS

5th Semester

GI5004 HYDROLOGY & WATER RESOURCES ENIGINEERING FOR GEOINFORMATICS

(Regulation2019)

Time:3hrs Max.Marks: 100

CO1	Understand the challenges faced by the scientific community in the management of water in the past as well as present situation in the face of ever changing climate and socioeconomic condition.
CO2	Develop knowledge on the previously used scientific methods and environment development with particular reference to the environment status and scope of geospatial technology to address the WRM issues.
CO3	Comprehend the current research trends and the remote sensing data sources, products and tools that are of value along with their limitation so as to find solutions to the issue of various phenomena and domain of WRM.
CO4	Analyze the complicated and multi source and layered problems of water resources management with state of the art, tools and techniques for sustained livelihood.
CO5	Apply the knowledge in the conceptualization of extraction and implementation of the Geospatial based solutions sets and to interpret them with tools from ancillary sources for dependable policy making.

BL – Bloom's Taxonomy Levels

(L1-Remembering, L2-Understanding, L3-Applying, L4-Analysing, L5-Evaluating, L6-Creating)

PART- A(10x2=20Marks)

(Answer all Questions)

Q.No	Questions	Marks	CO	BL
1	Define Hydrology.	2	1	1
2	Write the distribution of various water categories on earth as per USGS.	2	1	1
3	Draw the storm hydrograph for Urban and Rural area situation.	2	2	2
4	List the stages of watershed delineation and codification.	2	2	1
5	Write the spectral characteristics of snow with graph.	2	3	2
6	List the types of droughts with condition.	2	3	2
7	What are the main objectives of Groundwater modeling in India?	2	4	2
8	List any four water harvesting structure most commonly used.	2	4	1
9	What are the management practices to control soil erosion?	2	5	2
10	What do you understand about sustainable development?	2	5	1

PART- B(5x 13=65Marks)

(Restrict to a maximum of 2 subdivisions)

Q.No	Questions	Marks	CO	BL
11 (a)	Explain the various components of hydrological cycle with neat sketch.	13	1	3
	OR			

11 (b)	Discuss the spectral properties of water with spectral signature curve.	**13**	1	3
12 (a)	Discuss the application of LiDAR Remote sensing for urban mapping with case study.	**13**	2	3
	OR			
12 (b)	Explain the USDA – SCS Curve number method for runoff modeling.	**13**	2	3
13 (a)	Explain the Remote Sensing and GIS applications to Flood risk zone mapping with case study.	**13**	4	4
	OR			
13 (b)	Discuss the snow melt runoff estimation using Remote Sensing techniques.	**13**	4	4
14 (a)	Explain the application of Remote Sensing and GIS for ground water potential zone mapping with case study.	**13**	4	4
	OR			
14 (b)	Discuss the application of Remote Sensing and GIS for artificial ground water recharge zone mapping with case study.	**13**	4	4
15 (a)	Describe the various components of Sedimentation yield estimation using Universal soil Loss Equation.	**13**	5	3
	OR			
15 (b)	Explain the contributions of geospatial technology in prioritize the watersheds for development.	**13**	5	3

PART- C(1x 15=15Marks)

(Q.No.16 is compulsory)

Q.No	Questions	Marks	CO	BL
16	i) Analyze the impact of climate change on hydrology with a help of geospatial technology.	**10**	**4**	**5**
	ii) Describe the sea water instruction impact on coastal settlements.	**5**	**4**	**5**