Code No: **R204101K** **R20** **Set No. 1**

IV B.Tech I Semester Regular Examinations, January – 2024

URBAN HYDROLOGY

(Civil Engineering)

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

Answer any FIVE Questions
ONE Question from Each unit
All Questions Carry Equal Marks

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UNIT - I

1	a)	Describe how the urbanization is affecting the water cycle? Explain.	[7]
	b)	State the need for collecting the sub-daily (hourly) precipitation data. How will it useful in understanding the urban catchments?	[7]
		(OR)	
2	a)	Illuminate the various effects of urbanization on the regional hydrology.	[7]
	b)	What are the various factors need to be considered for design of the urban drainage system? Explain.	[7]

UNIT - II

3	a)	What are the various methods used for estimating the time of concentration? Explain any two of them.	[7]
	b)	Describe the different approaches for design of urban drainage.	[7]
		(OR)	
4	a)	In detail explain the NRCS curve number approach.	[7]
	b)	Write brief notes on Waste water and Storm water reuse. Mention the techniques available for them.	[7]

UNIT - III

5		With the help of a neat sketch, represent various elements of drainage system and explain them with suitable examples.	[14]
		(OR)	
6		The authority of Kakinada city is planning to extend their drainage network. What type of network (surface/underground) is suitable justify your answer comparing both the networks.	[14]

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UNIT - IV

7 a) What are the various storm water drainage structures in use in the urban areas? Explain them. [9]

b) Explain the term Best Management Practices with respect to storm water drainage structures. [5]

(OR)

8 Explain the detailed procedure (step-by-step) to be followed for the design of storm water drainage network. [14]

UNIT - V

9 What are the various issues need to be concentrated while preparing the master drainage plans in an urban area? Explicate your answer. [14]

(OR)

10 List out various models used in planning the urban drainage plan. Explain each of them with their merits and limitations. [14]