Subject: PC/CE/12-T **Hydrology** **Sem:5th**

Theory			
Week	**Lecture-Day**	**Topic (Including Assignment/Test)**	**Date**
1st	1	Introduction: Hydrologic cycle, scope and application of hydrology to engineering problems,	
	2	drainage basins and its characteristics, stream geometry, hypsometric curves.	
	3	Precipitation: Forms and types of precipitation, characteristics of precipitation in India	
nd 2	4	, measurement of precipitation, recording and non-recording rain-gauge, rain-gauge station,	
	5	rain-gauge network, estimation of missing data,	
	6	presentation of rainfall data, mean precipitation, depth -area -duration relationship,	
rd 3	7	frequency of point rainfall, intensity - duration- frequency curves,	
	8	probable max. precipitation.	
	9	Evaporation & Transpiration: Process, evaporimeters and empirical relationships	
th 4	10	, analytical method, reservoir evaporation and methods of its control,	
	11	transpiration, evapotranspiration and its measurement,	
	12	Penman's equation and potential evapotranspiration	
th 5	13	Infiltration: Infiltration process, initial loss, infiltration capacity and.	
	14	measurement of infiltration,	
	15	infiltration indices	
6th	16	Runoff: Factor affecting run-off, estimation of runoff, rainfall-run off relationships,	
	17	measurement of stage-staff gauge, wire gauge, automatic stage recorder and stage hydrograph,	
	18	measurement of velocity-current meters, floats, area velocity method,	
7th		**Minor Test 1**	
8th	19	moving boat and slope area method,	
	20	electromagnetic, ultra-sonic and dilution methods of stream flow measurement, stage discharge relationship.	
	21	Hydrograph: Discharge hydrograph, components and factors affecting shape of hydrograph,	
9th	22	effective rainfall,	
	23	unit hydrograph and its derivation,	
	24	unit hydrograph and its derivation,	
10th	25	unit hydrograph of different durations, use and limitations of UH,	
	26	Flood frequency methods, Gumbel's method,.	
	27	graphical method, design flood	
11th	28	Ground Water: Occurrence, types of aquifers, compressibility of aquifers, water table and its effects on fluctuations	
	29	wells and springs, movement of ground water	
	30	Darcy's law	
12th	31	permeability and its determination,	
	32	permeability and its determination,	
	33	Numerical examples	
13th	34	porosity, specific yield and specific retention	
	35	storage coefficient, transmissibility	
	36	Numerical examples	
14th		**Minor Test 2**	
15th	37	Well Hydraulics: Steady state flow to wells in unconfined and confined aquifers.	
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