



JAIPUR ENGINEERING COLLEGE
AND RESEARCH CENTRE

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JECRC Campus, Shri Ram Ki Nangal, Via-Vatika, Jaipur

ASSIGNMENTS FOR SLOW LEARNERS

Academic Year 2020-21 (ODD Semester)

Course	B.Tech.	Date	OCT-2020
Subject & Subject Code	WRE (5CE4-05)	Semester/ Section	V SEMESTER/ SECTION A&B

Course Outcomes

CO1	Student can able to understand different terminology related to Irrigation structures and design of regulatory works.
CO2	Student can able to understand the various types' canal head works and design of diversion head works.
CO3	Student can understand various methods of analysis of the stability of dams and estimation of floods.
CO4	Student can apply mathematics, science and technology in the field of water resources engineering.

Q. No.	CO	Questions
		1st PART
1.	1	Explain the optimization techniques for irrigation projects.
2.	1	Describes term of Consumptive use of water.
3.	2	Write different between Lacey theory and Kennedy's theory.
4	2	Writes in detail about the Khosla's methods.
5	3	Define zero Equipotential line.
6	3	How can you estimate stability and seepage analysis of embankment dam?
7	3	Describe various types of failure of Earth dam.
8	4	Explain with the help of sketch the hydrologic cycle in nature indicating its various phases?
9	4	What are the types and forms of precipitation?
10	4	What is the duty of tube well water?



		2 ND PART
11	1	What do you understand by Indian crop seasons and water requirements?
	1	What is the present status of irrigation in India?
12	1	Develop a relationship between depth of irrigation water, field capacity, permanent wilting point, root zone depth and dry density of soil. Knowing the daily evapotranspiration how you will decide the irrigation interval.
13	2	Design an irrigation canal in clayey alluvial soil for full supply discharge =35 cumecs, coefficient of roughness 0.025, canal side slope 1:1, longitudinal slope 1 m in 5000. Also check for critical velocity ratio, allowable CVR is 0.9 to 1.1. Design the canal by Lacey theory and Use Kennedy's Equations.
14	2	Give a brief note on diversion headwork and also draw a neat sketch of layout of a diversion headwork. Mention various components of a diversion headwork.
15	2	Design an irrigation canal for the following data- FS discharge=16m ³ /sec, bed slope=1 in 5000 Kutter's N=0.0225, CVR (m)=1 Side slope=1/2 : 1 (H:V), use Kennedy's equations.
16	3	Explain all forces are applied on the gravity dam and arrangements done in the gravity dam to release uplift forces.
17	3	A masonry dam 6m high is 1.5 m wide at top & 4.5m wide at bottom' with Vertical water face. Determine the normal stresses at toe & heel for reservoir empty & full condition. Take $\rho = 2.4 \text{ g/cc}$ & $C=1$.
18	3	Give the functions of drainage gallery in dam section.
19	4	A basin has the area in the form of a pentagon with each side of length 20Km. The five rain gauges located at the corners A,B,C, D and E have recorded 60, 81,73, 59 and 45mm of rainfall respectively. Compute average depth of rainfall over the basin using arithmetic mean and Thiessen polygon methods.



20	4	There are four rain gauge stations neighboring a gauge A, which was inoperative during a storm. The records show that the storm rainfall for the four stations is 13.7, 14.1, 14.5, and 12.6 cm and the respective normal precipitation of the stations are 140, 146, 157, and 122 cm. If the normal rainfall of station A is 131 cm, calculate storm precipitation of station A
21	4	Design a canal by Lacey's theory for 30 cumecs discharge, and $f=0.9$.
22	4	Explain the methods of estimating missing rainfall data at a station in a basin.
23	4	What is Runoff? Explain different methods of estimating runoff?