Seat No.:	Enrolment No.

Subject Code: 170602

Instructions:

0.1

Time: 10:30 am - 01:00 pm

1. Attempt all questions.

Subject Name: Irrigation Engineering

2. Make suitable assumptions wherever necessary.

moisture is mainly available for utilization by the plants?

3. Figures to the right indicate full marks.

between Duty, Delta and Base period.

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(a) Describe with the help of sketch various forms of soil moisture. Which of these

Explain the terms (i) Duty (ii) Delta and (iii) Base period. Derive the relation

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Date: 02-12-2014

Total Marks: 70

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Q.2	(a)	1 0 ,						
	(b)	advantages and disadvantages of the drip irrigation? Explain the procedure for designing an irrigation channel using Kennedy's theory, when Q, N, m & S are given.						
		OR						
	(b)	The base period, intensity of irrigation and duty of various crops under a canal system are given in table below. Determine the reservoir capacity if the canal losses are 20% and reservoir losses are 12%. Culturable commanded area is 20,000 hectares.						
		Crop	Base period	Duty of water at	Intensity of			
		Стор	(days)	the field	irrigation (%)			
			(days)	(hectare/cumec)	Imgation (70)			
		Wheat	120	1800	20			
		Sugarcane	360	1700	20			
		Cotton	180	1400	10			
		Rice	120	800	15			
		Vegetables	120	700	15			
Q.3 Q.3	(a) (b)	Design an irrigation channel by Kennedy's theory to carry a discharge of 50 cumec. Take N = 0.0225 and m = 1.05. Bed slope is 0.2m per kilometer. OR What is canal lining? Explain advantages and disadvantages of canal lining. Design a lined concrete channel, trapezoidal in section to carry a discharge of 200 cumec at a slope of 30cm/km. The Manning's N = 0.017, and side slopes are 1.5:1. The limiting velocity in the channel is 2m/s.						
Q.4	(a) (b)	Explain causes of failure of weirs on pervious foundation and their remedies. Sketch the layout of a typical diversion head works and describe briefly the functions of the various components of diversion head works. OR						
Q.4	(a) (b)	Describe Bligh's creep theory for the design of weir over pervious foundation. What are the ill effects of water logging? How do you prevent water logging?						
Q.5	(a)	Describe with the help of neat sketches the various types of cross drainage works.						
	(b)	What is canal fall? Why is it necessary to provide a fall in a canal? Explain with sketch Ogee fall.						
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OR

- Q.5 (a) List the various methods for estimating maximum flood discharge and explain 07 unit hydrograph method.
 - (b) What is an escape? What are different type of escapes? Explain working of each type. 07
