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B. Tech. EXAMINATION, 2020

(Seventh Semester)

(Old Scheme)

(Re-appear Only)

IRRIGATION ENGINEERING

CE-405

Time : 3 *Hours*]   [*Maximum Marks :* 100

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt any *Five* questions. All questions carry equal marks.

1. (a) Define the terms duty and delta. Derive a relationship between duty and delta for a given base period. Also discuss factors affecting duty.   **10**

    (b) Define and describe Irrigation. Discuss about irrigation development in India.   **10**

2. (a) Enlist the requirement of an ideal regime condition in Lacey's regime theory.   **20**

    (b) What is the optimum depth of kor watering for rice crop ?

    (c) Give the relation between the duty and base period.

3. (a) In Khosla's method of independent variables, how would you apply corrections for thickness and slope of floor ?   **10**

    (b) Explain the causes of failure of hydraulic structures founded on previous foundations.   **10**

4. (a) Explain the procedure of designing an irrigation channel, using Kennedy's theory, given Q, Kutter's N, m and S. **10**

(b) What do you understand by Water logging in irrigation ? Discuss its effects, causes and remedial measures. **10**

5. Design lined canal to carry 200 cumec discharge with the following data : **20**

(a) Angle of repose of soil = 45 degree

(b) Lacey's silt factor = 2.2

(c) B/D ratio = 3

(d) Value of N = .018

6. Write short note on 'Bligh's creep theory and Khosla theory for seepage flow'. **20**

7. (a) Explain various cross drainage works with the help of neat sketches. **10**

(b) Write down the criteria for judging the performance of outlets. Discuss the principle of open flume outlet and A.P.M. outlet. **10**

8. (a) What do you understand by uplift pressure on bottom floor of CD works ? Discuss the design of CD works. **10**

(b) With the help of a neat sketch illustrate the classification of canals based on their alignment. **10**