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Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(CE) (2011 Onwards) (Sem.-4)

**IRRIGATION ENGINEERING-I**

Subject Code : BTCE-405

M.Code : 56087

Time : 3 Hrs.

Max. Marks : 60

**INSTRUCTION TO CANDIDATES :**

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

**SECTION-A****1. Answer briefly :**

- a. List the various disadvantages of irrigation.
- b. Write short note on conjunctive use of surface and ground water.
- c. Distinguish between Delta, duty and base period.
- d. What is a Cash Flow diagram?
- e. List the various types of Canals.
- f. In what situations lined canals are preferred?
- g. How Tubewell site is selected?
- h. List the various types of river training works.
- i. Why drainage is provided behind lining of canals?
- j. What do you understand by safe yield of a Tubewell?



**SECTION-B**

2. a. Why is Irrigation necessary? Discuss the impact of irrigation on human environment,  
b. Explain the concept of Ideal cropping pattern particularly *w.r.t* North India.
3. What is Drip irrigation? Describe briefly the component parts of drip irrigation system.
4. Discuss the factors affecting Seepage losses in irrigation channels. Also explain the two conditions of seepage from irrigation channels.
5. Explain the procedure of designing an irrigation channel, using Kennedy's theory, given  $Q$ , Kutter's  $N$ ,  $m$  and  $S$ .
6. Discuss the causes and effects of waterlogging in a canal fed land. Explain the mass curve analysis for reservoir capacity.

**SECTION-C**

7. How is river training classified *w.r.t* its objectives?
8. Explain the functions of Groynes using different classifications.
9. Explain the following :
  - a. High-yielding varieties of crops.
  - b. Field capacity and Wilting coefficient.
  - c. Lining of Irrigation channels.
  - d. Guide banks.

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**