Roll No…….. **Total No. of Printed Pages: 1**
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B. Tech Civil (Semester – 6th)
IRRIGATION ENGINEERING
Subject Code: BCIES1624
Paper ID: 19110729

Time: 03 Hours **Maximum Marks: 60**

Instruction for candidates:

1. Section A is compulsory. It consists of 10 parts of two marks each.
2. Section B consist of 5 questions of 5 marks each. The student has to attempt any 4 questions out of it.
3. Section C consist of 3 questions of 10 marks each. The student has to attempt any 2 questions.

Section – A **(2 marks each)**

Q1. Attempt the following:
(a) Write main benefits of irrigation.
(b) What do you mean by perennial and non-perennial canals?
(c) What do you mean by benefit cost ratio?
(d) In which situation lined canals are preformed?
(e) Define specific yield.
(f) Write the assumptions of Theim and Dupit's equation related to discharge from a well.
(g) What is meant by development of tube well?
(h) List the various types of river training works.
(i) Why river training work is necessary? Explain.
(j) Define water logging?

Section – B **(5 marks each)**

Q2. Discuss about sprinkler irrigation and write advantages and disadvantages of it.
Q3. Define Base, Delta and duty and establish relationship between them.
Q4. Explain clearly the difference between Kennedy's and Lacey's theory.
Q5. Explain various methods of providing drainage behind lining.
Q6. Discuss the ill effects of water logging and also explain various anti water logging measures.

Section – C **(10 marks each)**

Q7. Design a channel by using Lacey's theory with the following data:
Full supply discharge = 10 cumecs
Mean diameter of the silt particles=0.33mm
Side slope = 0.5:1
Also, find the bed slope of the channel.
Q8. Define the yield of tube wells. Describe the unconfined aquifer and confined aquifer.
Q9. Discuss the stepwise procedure with diagram for the design of guide bank.