Roll No. to be filled in your Answer Book

B. Tech

(SEM V) (ODD Sem.) Examination, 2014

Water Resource engg.

Time: 3 Hours Total Marks: 100

Note : (i) Attempt **ALL** questions.
(ii) All Questions carry **EQUAL** marks.
(iii) In case of numerical problems assume data whenever not provided.
(iv) Don't write any think on the question paper except your roll no.

1. Attempt any FOUR of the following: 5x4=20

a) What are the necessities of water conservation?
b) Give the different method of irrigation.
c) What are the disadvantages of irrigation?
d) Explain with the help of diagram various form of soil moisture. What do you understand by available moisture?
e) What do you understand by Duty and Delta of canal water and derive the relation between them.

f) Write a short note on crop period & base period.

2. Attempt any FOUR of the following: 5X4=20

a) What do understand by a head regulator? State the function of distributary head regulator and a cross regulator.
b) What is a cistern element in a fall? Explain.
c) Write short note on maintenance of irrigation canal.
d) What are the advantages of lining of canal?
e) Write the design step for lined channel.
f) What is sediment? How sediment transported in steam?

3. Attempt any TWO of the following: 10x2=20

a) What is the limitation of bligh's theory in design of impervious floor for sub surface flow.
b) Write the design step of Lacey's theory and design a regime channel for a discharge 50 cumec & silt factor 1.1, using lacey's theory.

c) A horizontal impervious floor of 20m length is providing with a cut off of 4m depth at its downstream end. Determine analytically the uplift pressure at point E & D and also the exit gradient if head cause seepage is 2m (fig-1)

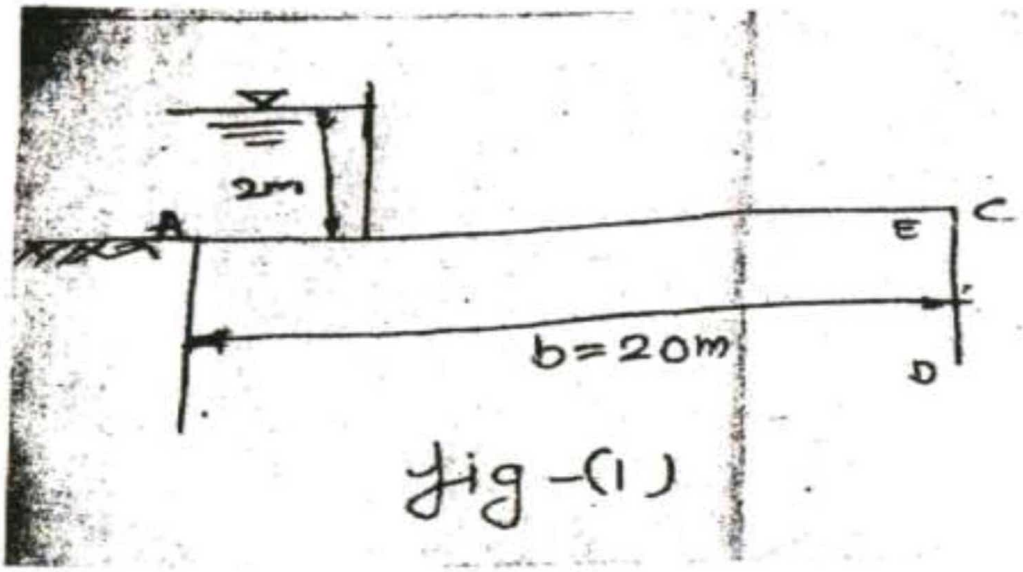

Fig -(1)

4. Attempt any TWO of the following-: 10x2=20

a) Write the design step for vertical drop weir.
b) What are the various considerations for alignment of an irrigation canal?
c) Write the design steps for Sarda type fall.

5. Attempt any TWO of the following-: 10x2=20

a) Explain the Bligh's creep theory for seepage flow and write the condition for safety against piping or undermining.

b) Explain in detail about Khosla's theory & concept of flow nets

c) Write the principal components of a hydroelectric scheme?