Roll No. ....

Total No. of Questions : 09

Total No. of Pages : 03

B.Tech. (CE) (Sem.–7th & 8th)

IRRIGATION ENGINEERING II

Subject Code : CE-410

Paper ID : [A0628]

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 has to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students has to attempt any TWO questions.

SECTION-A

1. Write briefly :

a) What is safe exit gradient enumerated by Khosla's theory of design of weirs and barrages?

b) Why canal falls are necessary in canal design?

c) Write characteristics of a good irrigation canal outlet.

d) When an irrigation outlet is said to be proportional?

e) Enumerate the conditions which govern the selection of type of canal fall.

f) Enumerate the role of sensitivity and proportionality in canal outlets.

g) What is super passage? Why it is required in canal?

h) Why the alignment of canal over the watershed line is preferred?

i) List the various functions of diversion head works.

j) What is the use of energy dissipation devices in weir?

SECTION

2. Design a pipe outlet for full s watercourse = 90 lit/sec, FSL in dis course = 204 m.

3. Describe Lane's creep theory and Kh

4. Describe design principles of an aque

5. Determine total floor length of unflum following given data ;

   Full supply Discharge:

   Bed level U/S:

   Bed level D/S:

   FSL U/S:

   FSL D/S:

   Bed width:

   Canal drop:

   Side slope of channel:

6. Explain the various steps involved permeable foundations using Khosla's

SECTION

7. Design a 1.5 m sarda type canal fall fo

Canal discharge = 12
Bed level U/S = 103 m
Bed level D/S = 101.5
FSL U/S = 104.5 m
Bed width U/S and D/S
Soil type = loam
Side slope = 1H:1V
Assume Blig's coefficien

8. Describe the necessity and functioning of Distributary head regulator and Cross regulator in a canal project. Also discuss the procedure adopted in designing these regulation works.

9. Design a siphon aqueduct for the following data :

Canal	Drainage
Full Supply discharge = 40 cumecs	Maximum flood discharge = 450 cumecs
Bed level = 206.4 m	HFL = 207 m
Full Supply depth = 1.6 m	Average bed level = 204.5 m
Bed width = 30 m	Average ground level = 206.5 m
Side slope = 1.5H: 1V	