SECTION – D

8. Design a syphon aqueducts with following data for canal : **20**

Discharge	= 56 cumecs
Bed width	= 32 m
F.S depth	= 1.98 m
R.L of bed	= 267 m

For drainage :

High flood discharge	= 450 cumecs
HFL	= 268.20 m
General bed level	= 265.50 m
General ground lever	= 267.2 m

9. (a) What are the steps involved in design of stilling basin ? **10**

(b) Explain briefly the design procedure of elements of an earth dam. **10**

Roll No. .....

24514

B. Tech. 7th Semester (Civil Engg.) Examination – June, 2016

IRRIGATION ENGINEERING-II

Paper : CE-407-F

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

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

Note : Attempt ***five*** questions in all, selecting ***one*** question from each Section. Question No. 1 is ***compulsory***. All questions carry equal marks.

1. Explain :

(a) Types of aqueducts

(b) Use of flood routing

(c) Exit gradient and its importance

(d) Canal siphon

(e) Components of guide banks

(f) Selection of type of cross-drainage work

(g) Ogee spillway

(h) Coefficient of discharge

(i) Importance of rock toe and relief wells

(j) Formula for hyperbolic transition $2 \times 10 = 20$

SECTION – A

2. Design the length and thickness of aprons for a weir with a vertical drop : 20

Nature of bed = coarse sand with Bligh °C = 10

Length of weir = 350 cumecs

Height of weir above low water = 2 m

Height of falling shutter = 0.5 m

Top width of weir = 2 m

Bottom width of weir = 3.7 m

3. (a) Explain Bligh's creep theory for seepage flow. 10

(b) Brief factors governing the design of weirs. 10

SECTION – B

4. Explain types of methods used for flood routing in detail. 20

5. Describe briefly the step by step procedure for designing an unflumed syphon aqueducts. 20

SECTION – C

6. Design a 1.2 m sarda typefall for a canal having discharge of 13 cumecs. Data given : 20

Bed level upstream = 101 m

Side slopes of channel = 1 : 1 m

Bed level downstream = 100.1 m

FSL upstream = 105 m

Bed width U/S and D/S = 1 m

Bligh's coefficient = 6

7. Explain the methods of plotting seepage line in a homogeneous earth dam on impermeable foundation with horizontal drainage. 20