

24514

(4)

Part-C

6. Write the procedure of designing Sarda type fall. 20
7. Explain the method of plotting seepage line in a homogenous earth dams on impermeable foundation with horizontal drainage. 20

Part-D

8. (a) Head of water over the crest of ogee spillway is 3m and coefficient of discharge 2.5. Weir is 100m long and height of crest above the base of approach channel is 10m. Width of approach channel is equal to length of the weir. Find out discharge passing over the spillway. 10
- (b) What are the steps involved in design of stilling basin? Write down step by step. 10
9. What elements have to be designed in the design of an earth dam? Explain briefly the design procedure of each element. 20

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

December-2015

IRRIGATION ENGG-II

Paper-CE-407-F

Time allowed : 3 hours] [Maximum marks : 100

Note: There are nine questions in all. Q. No. 1 is compulsory and students have to attempt one question from each of the four parts.

1. (a) What is a weir? 2×10=20
- (b) List Components of guide Banks.
- (c) Mention the factors governing spacing of groynes.
- (d) What is flood routing?
- (e) Give various expressions for dimension of cistern.
- (f) What are the minimum vertical clearance for rectangular opening for aqueduct?
- (g) Write Mitra's formula of hyperbolic transition.
- (h) What are spillways? Where are they provided?
- (i) What is function of inlet and outlet?
- (j) Make a neat sketch of Ogee spillway.

24514-P-4-Q-9 (15)

[P.T.O.]

Part-A

2. The following hydraulic data pertain to a bridge site of a river.

Max^m discharge = 6,000 cumecs

HFL = 104.0 m

River bed Level = 100.0 m

Average diameter of river bed material = 0.10 mm
Design and sketch guide bank including launching apron to train the river. 20

3. A weir on a sandy soil is shown in fig (a) below. Find out the uplift pressures at points A, 8 and 12 m from the u/s end of the pucca apron. Also find out thickness of floor at these points considering specific gravity γ of floor material as 2.24. Adopt Bligh's theory for analysis and weight of water as one tonne per cubic meter of water. 20

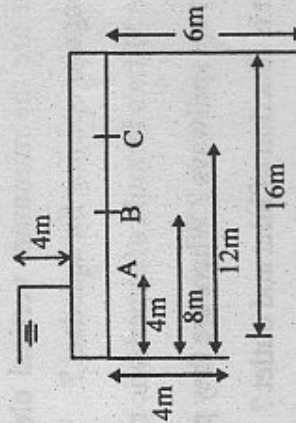


fig (a)

Part-B

4. What do you understand by flood routing? Explain step by step method in detail. 20
5. Design and draw the following elements of a syphon aqueduct 20

(i) drainage water way

(ii) Canal waterway

(iii) Levels at different sections. For following data :

(a) Canal discharge = 20 cumecs

(b) Width of canal = 17.5 m

(c) Depth of canal = 1.6 m

(d) B.L of canal & general ground = 100.0

(e) High flood discharge of drainage = 225 cumecs

(f) H.F.L. of drainage on D/S side = 100.50 m

(g) B.L of drainage = 98.00