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Total No. of Questions : 5 Total No. of Printed Pages : 4

EIS-208-209

B.E. (VIIth Sem.) (CGPA) Civil Engg. Exam.-2016

IRRIGATION ENGINEERING

Paper - CE-705

Time Allowed : Three Hours
Maximum Marks : 60

Note : All questions are compulsory.

All questions carry equal marks.

Unit-I

Q.I (a) Differentiate between a weir and a barrage. Why is a barrage preferred to a weir in modern times. 6

(b) Draw a typical layout sketch of a diversion head work scheme, when two canals are off taking from the river, one on each side. 6

or

Following corrected ϕ values where computed from Khosla's curves for a barrage constructed on pre

meable foundations—

U/S sheet pile	ϕ_{E_1} =100%	ϕ_{D_1} =90%	ϕ_{C_1} =85%
Intermediate pile	ϕ_{E_2} =80%	ϕ_{D_2} =70%	ϕ_{C_2} =65%
d/s sheet pile	ϕ_{E_3} =55%	ϕ_{D_3} =45%	ϕ_{C_3} =0%

Distance between U/s and intermediate piles is 20m and that between intermediate and d/s pile is 40m. Assuming that the floor is horizontal throughout, draw the hydraulic gradient line for subsurface flow. If the net head is 10m, determine the thickness of the floor at distances of 20 m and 30 m away from the intermediate pile

Unit-II

Q.II (a) What is the necessity of providing regulating structures in canal. 6

(b) What are different types of canal escapes. Describe in detail. 6

or

(a) Name the various regulation works constructed on canal and what are their functions.

(b) Differentiate between aqueduct and superpassage.

Unit-III

Q.III (a) What are the factors considered for selection of site for a reservoir. 6

(b) Describe in detail zones of storage in a reservoir. 6

or

Classify the dams in detail. What are the factors which affect the selection of a dam. 12

Unit-IV

Q.IV (a) Explain the various purposes and types of galleries provided in the gravity dam. 6

(b) How do you control the cracking in a concrete gravity dam. 6

or

Design the practical profile of gravity dam between RL 200.0m to RL 111.8m for the following data. Maximum allowable compressive stress in concrete = 3000 KN/m^2. Maximum reservoir level = 200.0 m

R.L. of bottom of dam = 100.0 m

Specific gravity of Concrete = 2.4

Unit weight of water = 9.81 KN/m^3

Unit-V

Q.V (a) Name various hydro power plants and describe any one in detail. 6

(b) Give the criterion for the selection of suitable type of turbines for hydro electric scheme. 6

or

(a) What are the different types of hydro power plants based on storage characteristics. Explain any one in detail.

(b) Define spillway. What is the purpose to provide it ? What are the essential requirement where the spillway is located ?
