

**2372**

**B.E. 6th Semester (Civil Engg.) Examination,  
May-2012**

**IRRIGATION ENGG-I**

**Paper-CE-304-E**

*Time allowed : 3 hours ] [ Maximum marks : 100*

*Note : Attempt any five questions.*

1. (a) What is roughening devices ? Explain design of various roughening devices. 10
- (b) Explain the procedure of designing straight glacisfall. 10
2. (a) What are the functions of regulators and falls on main canal ? 10
- (b) What do you understand by canal Escape ? Explain with Neat sketches classification of escapes depending upon the purpose. 10
3. (a) What do you understand by level crossing ? 10
- (b) Explain the method of fixation of water-way of drain in an aqueduct. 10

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4. Explain the procedure of designing of syphon aqueduct with the following data :

- (i) Discharge of the canal :  $25 \text{ m}^3/\text{sec}$
- (ii) Bed width of the canal : 20 m
- (iii) Depth of water in canal : 1.5 m
- (iv) Bed level of the canal : 160.00 m
- (v) High flood discharge of the drainage :  $400 \text{ m}^3/\text{sec}$
- (vi) Bed Level of the drainage : 158.00 m
- (vii) General ground Level : 160.00 m 20

5. (a) Explain design procedure of the imperious floor or the apron by Bligh's creep theory. 10

(b) What are the limitation of Bligh's Creep theory ? 10

6. (a) Give a practical profile of a low gravity dam. 10

- (b) Distinguish clearly between a low gravity dam and high gravity dam. Derive the expression used for such a distinction.

Determine the critical height of a low gravity dam of concrete, taking the specific gravity of concrete as 2.4 and allowable compressive stress as  $340 \text{ t/m}^2$ . 10

7. (a) What are the criteria for safe design of earth dam? 10
- (b) Explain the Method of plotting phreatic line for an earth dam with horizontal filter at down stream. 10
8. (a) Explain the design procedure for the standard stilling basintype I. 10
- (b) What are different types of spillways? Explain with neat sketch. Shape of ogee or over flow spillway. 10