

DIPLOMA IN CIVIL ENGINEERING

Term-End Examination

June, 2012

BICEE-008 : IRRIGATION ENGINEERING

Time : 2 hours

Maximum Marks : 70

*Note : Attempt any five questions and question no.1 is compulsory. Assume missing data if any.*

1. Write whether the following statements are *True* or *False*. 7x2=14
- (a) Evaporation increases with an increase of humidity.
  - (b) Generally, high intense rainfall occurs for a short duration.
  - (c) Cotton is a perennial crop.
  - (d) A lysimeter has an impervious bottom.
  - (e) Duty can be increased by reducing losses.
  - (f) Height of gravity dam in general means the Hydraulic height.
  - (g) Headway is the same as the free board.

2. (a) What are the different types of irrigation ? Explain them. 7
- (b) Give a brief description of different components of hydrologic cycle. 7
3. (a) What are the factors that effect duty ? 7
- (b) Discuss various methods for the classification of crops. 7
4. (a) Differentiate between the well irrigation and canal irrigation. 7
- (b) Discuss the methods of the lift irrigation. 7
5. (a) What factors will you consider while selecting a suitable types of cross drainage works. 7
- (b) Name the various regulation works on a canal. What are their functions ? 7
6. (a) Explain different types of outlets. 7
- (b) Explain the different types of tube wells. 7
7. (a) Compare Kennedy's theory and Laecy's theory. 7
- (b) Design an irrigation channel to carry a discharge of 15 cumecs when maximum permissible velocity is 0.8 m/s. Assume bed slope as 1 in 4000 and side slope 1 : 1. Taking Manning's  $N = 0.025$ . 7

8. Write short notes on *any four* of the following :

- (a) Forces acting on gravity dam **4x3<sup>1</sup>/<sub>2</sub>=14**
  - (b) Causes of water logging
  - (c) Types of spillways
  - (d) Selection of pump
  - (e) Methods of lifting water
  - (f) Sources of irrigation water.
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