

**DIPLOMA IN CIVIL ENGINEERING (DCLEVI)**  
**Term-End Examination**

00665

**December, 2014**

**BICEE-008 : IRRIGATION ENGINEERING**

*Time : 2 hours*

*Maximum Marks : 70*

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

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1. Write 'True' or 'False'.

7×2=14

- (a) Time interval between sowing and harvesting of crop is known as crop period.
- (b) Sugarcane is a commercial crop.
- (c) In gravity dam, main overturning force is wind pressure.
- (d) The silt factor for medium is 1.5.
- (e) Crop rotation  
$$= \frac{\text{Area irrigated in Rabi season}}{\text{Area irrigated in Kharif season}}$$
- (f) Specific yield for an unconfined aquifer is less than porosity.
- (g) The unit of average rainfall is "m<sup>2</sup>".

2. (a) Define the terms “Duty”, “Delta” and “Base period”. Derive the relation between them. 7
- (b) Enlist various types of rain gauges and state various sources of errors while recording rainfall. 7
3. (a) Compare Kennedy’s and Lacey’s silt theories. Why is Lacey’s conception superior to that of Kennedy’s? 7
- (b) A tube well of 30 cm diameter penetrates fully in an artesian aquifer. The strainer length is 15 m. Calculate the yield from the well under a drawdown of 3 m. The aquifer consists of sand of effective size of 0.2 m and having coefficient of permeability equal to 50 m/d. Assume radius of drawdown equal to 150 m. 7
4. (a) Differentiate between Weir and Barrage with respect to crest level, silting with sketches. 7
- (b) Define syphon and level of crossing with neat sketches. 7
5. (a) Discuss various types of wells and tube wells with neat sketches. 7
- (b) What is an Earthen Dam? Explain the causes of its failure. 7

6. (a) What are the major advantages of tube wells over open wells ? 7
- (b) Discuss the effects and causes of water logging. 7
7. (a) What is the main objective of irrigation channels' lining ? Discuss the merits and demerits. 7
- (b) Discuss the various classifications of canals. Provide main features on the basis of alignment. 7
8. Write short notes on any **four** of the following :  $4 \times 3 \frac{1}{2} = 14$
- (a) Types of Spillway
- (b) Gross Command Area
- (c) Crop Season
- (d) Cultivator Command Area
- (e) Critical Velocity Ratio
- (f) Kharif and Rabi Crops
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