

DIPLOMA IN CIVIL ENGINEERING (DCLEVI)

Term-End Examination

December, 2017

00302

BICEE-008 : IRRIGATION ENGINEERING

Time : 2 hours

Maximum Marks : 70

Note : Attempt **five** questions in all. Question no. 1 is **compulsory**. All questions carry equal marks. Assume missing data, if any. Use of scientific calculator is allowed.

1. Write *True* and *False* for the following : $7 \times 2 = 14$
- (a) Excessive irrigation may cause waterlogging.
 - (b) Mixed cropping is found economical where irrigation facilities are lacking.
 - (c) Pumps, pipes and nozzles are provided in sprinkler irrigation.
 - (d) Presence of salts in soil decreases the crop yield.
 - (e) Rice is a kharif crop.
 - (f) Gross command area is greater than culturable command area.
 - (g) Watering that is done prior to sowing of crops is called Paleo irrigation.

2. (a) Define the following terms : 6
 (i) Gross Command Area
 (ii) Culturable Command Area
- (b) What is Waterlogging ? What are the causes of waterlogging ? 8
3. (a) What are the differences between a weir and a barrage ? List the different types of weirs. 6
- (b) Define the following terms : 4×2=8
 (i) Water table
 (ii) Radius of influence
 (iii) Depression head
 (iv) Cone of depression
4. Find out the capacity of the reservoir if its culturable area is 65000 ha, from the following data : 14

S.No.	Type of Crop	Sugarcane	Wheat	Rice
1.	B in days	330	120	120
2.	D in ha/cumec	2200	1800	800
3.	Intensity of irrigation as percentage	15	20	10

5. (a) Describe in detail with neat sketches, the recording type of rain gauges. 8
- (b) Differentiate between masonry and concrete dams, with the help of neat sketches. 6
6. (a) Discuss Lacey's theory. 6
- (b) What are the advantages and disadvantages of different types of canal linings? 8
7. (a) Derive an expression for discharge calculation for a confined aquifer. 7
- (b) What is cross drainage work? Discuss in detail. 7
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