

DIPLOMA CIVIL ENGINEERING

Term-End Examination

December, 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 True or False 2x7=14
- (a) A mass rainfall curve is always a rising curve.
 - (b) The actual infiltration rate is equal to the infiltration capacity.
 - (c) A low gravity dam is the dam whose height is less than 20m.
 - (d) The air-vent pipe in a saddle-siphon spillway is provided for the priming of the spillway.
 - (e) Sugar cane is a commercial crop
 - (f) Crops use about 1% of the applied water in metabolism.
 - (g) The silt factor for medium sand is 1.0.
2. (a) What is run off ? Differentiate between direct run off and the base flow. 7
- (b) Explain the different methods of measurement of precipitation. 7

3. (a) How would you determine the optimum number of rain gauges for a basin ? 7
 (b) Define duty, delta and base period. Derive the relation between them. 7
4. (a) What are the uses of water for crop ? 7
 (b) Design an irrigation by Kennedy's theory to carry a discharge of 15 cumecs. 7
 Take $N=0.0225$ for Chezy's formula, critical velocity ratio $m=1.0$ and slope $S=1$ in 5000.
5. (a) Describe the various types of cross drainage works in canal. 7
 (b) Explain the functions of the distributory Head regulator and the Cross regulator. 7
6. (a) Differentiate between an open well and tube well. What are the advantages of tubewells over open well ? 7
 (b) What are the methods of construction boring ? 7
7. (a) Explain the difference between weir and barrage with neat sketches. 7
 (b) What are the causes of water logging ? 7

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

- (a) Intensity of irrigation 3.5x4=14
 - (b) Types of Spillway.
 - (c) Causes of failure of Dam
 - (d) Classification of Dam
 - (e) Super passage
 - (f) Types of rain gauges.
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