

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

June, 2015

BICEE-007 : WATER POWER ENGINEERING

Time : 2 hours

Maximum Marks : 70

Note : Attempt *five* questions in all. Question no. 1 is *compulsory*. All questions carry equal marks. Use of calculator is allowed.

1. Select the correct answer for the following questions : $7 \times 2 = 14$
- (a) The area of land draining into a stream at a given location is known as _____ .
- (i) Run off
 - (ii) Stream flow
 - (iii) Catchment area
 - (iv) Transpiration
- (b) The non-recording gauge extensively used in India is _____ .
- (i) Tipping Bucket type
 - (ii) Weighing Bucket type
 - (iii) Symon's gauge
 - (iv) None of the above

- (c) _____ is a plot of the intensity of rainfall against the time interval.
- (i) Hyetograph
 - (ii) Hydrograph
 - (iii) S-curve
 - (iv) Hydrology
- (d) An isohyet is a line joining points having equal
- (i) evaporation value
 - (ii) rainfall depth
 - (iii) rainfall magnitude
 - (iv) barometric pressure
- (e) _____ is the channel into which the draft tube discharges.
- (i) Artificial race
 - (ii) Tail race
 - (iii) Scroll casing
 - (iv) Draft tube
- (f) Specific speed of Kaplan turbine is _____.
- (i) 220 to 10000
 - (ii) 300 to 1000
 - (iii) 1500 to 10000
 - (iv) 700 to 1000

(g) _____ is a hydraulic structure, constructed across a river to store water on its upstream side.

(i) Flume

(ii) Dam

(iii) Spillway

(iv) Aqueduct

2. (a) Compare hydro-power and thermal-power systems, with reference to Indian conditions. 7

(b) Describe hydrological cycle with a neat sketch. 7

3. (a) What are the different methods of classifying hydroelectric power plants? 7

(b) Write a short note on the classification of dams based on design/constructional features. 7

4. (a) What is meant by embankment dam? 4

(b) Explain how seepage can be controlled in an earthen dam. 10

5. (a) Differentiate between automatic and non-automatic gates. 7
- (b) Write short notes on the following : 7
- (i) Fore bay
- (ii) Intake structure
6. (a) Discuss in brief the merits and demerits of gravity dams. 7
- (b) What is penstock ? Explain the function of penstock. 7
7. Write short notes on the following : $4 \times 3 \frac{1}{2} = 14$
- (a) Run-off-River Plant
- (b) Conveyance System
- (c) Selection of Turbine
- (d) Plant Capacity
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