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**B.E. VIIIth Semester (CGPA)  
Examination, 2017**

**EF-352**

**CIVIL ENGG.  
(Hydraulic Structures)  
Paper : CE-805**

**Time : 3 Hours]**

**[Maximum Marks : 60**

**Note :-** Attempt any *five* questions. All questions carry equal marks.

1. Explain the various forces acting on a gravity dam with neat sketches.
2. Explain the causes of failure of earth dams. Also discuss their design criteria.
3. Explain the working and design details of a syphon spillway.

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4. Discuss the classification of hydropower plants on the basis of :
  - (i) Hydraulic characteristics
  - (ii) Operating head on turbines.
5. Enumerate the different types of spillways which are used in dam construction.
6. What are Energy dissipators ? Why are they used ? Discuss the energy dissipators based on Tail water curve and jump height curve.
7. Discuss the classification of turbines on the basis of energy at inlet and head on turbines.
8. Write short notes on any *four* :
  - (i) Ogee spillway
  - (ii) Chute spillway
  - (iii) Draft tube
  - (iv) Siphon aqueduct
  - (v) Surge tanks.

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