8E4032

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B. Tech. VIII Semester (Main/Back) Examination-2014

Civil Engineering

8CE2 Water Resources Engineering - II

Time : 3 Hours **Maximum Marks : 80**
Min. Passing Marks : 24

Instructions to Candidates:

*Attempt any **five** questions, selecting **one question from each** unit. All questions carry **equal** marks. (Schematic diagrams **must be shown** wherever necessary. Any data you feel **missing suitably be assumed** and stated clearly. Units of quantities used/calculated must be stated clearly.)*

Unit - I

1. a) Give the steps in design of Falls. **(8)**
   b) What points will you consider in selection of site for cross drainage works. **(8)**

OR

1. a) Explain the method of determination of uplift pressure on the floor of a syphon aqueduct. **(8)**
   b) Draw neat sketch of distributary head regulator and label it and explain various parts in brief. **(8)**

Unit - II

2. a) Describe Khosla's theory of independent variables in detail. **(8)**
   b) Explain Bligh's creep theory and its limitations. **(8)**

OR

2. a) Draw neat sketch of silt excluder and label it. Also explain the functions of silt excluder. **(8)**
   b) Describe the hydraulic and structural aspects of design of weirs and barrages. **(8)**

Unit - III

3. a) Explain the process of carrying out stability analysis of an earth dam. **(8)**
   b) Explain the various forces acting on a gravity dam. **(8)**

OR

3. a) What the causes of failure of an earthen dam. **(8)**

   b) Give the functions of with the help of neat sketches -

      i) Rock toe

      ii) chimney filter

      iii) core in an earthen dam.

      iv) Inspection gallery and instrumentation. **(2×4=8)**

Unit - IV

4. Enumerate various types of spillways. Describe Chute spillway with a neat sketch. Also, describe the design of its various components. **(16)**

OR

4. Give detailed classification of hydropower plants. Also give the functions of draft tube. **(16)**

Unit - V

5. a) What do you understand by Reservoir sedimentation. How is it helpful in determination of life of a Reservoir? . **(8)**

   b) Explain what do you understand by watershed management? Explain the various methods of watershed management in brief. **(8)**

OR

5. Give a brief introduction to optimization techniques and G/S. **(16)**