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320679(20)

B. E. (Sixth Semester) Examination, April-May 2020

(New Scheme)

(Civil Engg. Branch)

WATER POWER ENGINEERING

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : *For every question (a) is compulsory which carries 2 marks and attempt any two questions from (b), (c) & (d) which carries 7 marks each.*

Unit-I

1. (a) Write two factors on which the development of power from flowing water depends. 2

(b) Discuss the strengths, weakness and future prospects of water power in India. 7

(c) Give a brief comparision between hydro, thermal and nuclear power in minimum 7 points. 7

(d) Discuss the relation of water power and hydrology. 7

Unit-II

2. (a) What is pondage? 2

(b) Explain the graphical representation for stream flow analysis. 7

(c) Discuss the storage capacity of reservoir by Masscurve methods with formula to support the answer. 7

(d) What is Runoff and write the factors affecting runoff. 7

Unit-III

3. (a) What is a pumped storage plant? 2

(b) Explain the classification of hydropower plant based on design features. 7

(c) What is a diversion canal plant? How the head of diversion canal plant can be developed by general procedure. Explain. 7

(d) Explain how tidal power is generated and write the advantages and disadvantages of tidal power plant. 7

Unit-IV

4. (a) What is a water hammer? 2

(b) Write the design criteria for penstockes and write about methods of support to penstocks. 7

(c) What do you mean by economical diameter of penstock and explain the methods used to determine the size/diameter of the penstock 7

(d) What is a sunge tank? Write the necessity and types of sunge tanks. 7

Unit-V

5. (a) Write the basic objective of power house planning. 2

(b) Write about three main divisions of a hydro-power station structure with a neat sketch to support your answer. 7

(c) Describe the various locations of underground power stations and write the advantages of the underground power house. 7

(d) Write the components of underground power house

and draw and mention types of layout for underground power house. 7