

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT  
MID TERM (SUMMER SEMESTER EXAMINATION)-JUNE-2018

B.Tech VII Semester

COURSE CODE:10B1WCE732

MAX. MARKS:50

COURSE NAME: Hydropower Engineering

COURSE CREDITS: 04

MAX. TIME: 2 Hrs

*Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means. Assume suitable data wherever required.*

1. What you mean by the term "Hydro-Electricity". Explain the principle behind generation of hydropower. Discuss the advantages and disadvantages of hydropower generation. [10]
2. Describe in detail the essential elements and working of a hydro-electric power plant with the help of a neat figure. [15]
3. What is cavitation and how does it affect the working of a hydro-power plant. What measures can be adopted to minimize the same. [10]
4. Discuss the factors need to be considered during the selection of turbines for a hydropower plant. [10]
5. A penstock is working under a water head of 210 m and its diameter is 2.4 m. If the joint efficiency is 82% and allowable stress in the material is  $105 \text{ MN/m}^2$ , determine the thickness of the penstock required. [5]