

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -3 EXAMINATION- 2024

B.Tech-VII Semester (CSE/IT/ECE/BT/BI)

COURSE CODE (CREDITS): 22B1WCE733 (3)

MAX. MARKS: 35

COURSE NAME: PERENNIAL POWER STRUCTURES

COURSE INSTRUCTORS: NIRAJ SINGH PARIHAR

MAX. TIME: 2 Hrs

Note: (a) All questions are compulsory.

(b) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

Q.No	Question	CO	Marks
Q1	Provide an outlook of the energy derivation from oceans. Discuss the various forms of power generation from oceanic sources with their working principle.	CO1,2	2+5
Q2	Describe the functional working of a boiling water nuclear reactor or a gas cooled nuclear reactor with the help of a well-described figure.	CO2,4	7
Q3	A nuclear reactor uses carbon as moderator. If the initial energy of the neutron is 3 MeV, evaluate: (a) The ratio of energies per collision (b) The number of collisions required to reduce the energy of neutron to 0.1eV	CO2, 3	5
Q4	Classify the hydropower projects in brief on different grounds. Discuss the major challenges faced and the applied solutions during construction of the Three Gorges hydropower project.	CO4,5	3+5
Q5	The quantity of water available for hydroelectric power station is 250 m ³ /sec under a head of 1.6 m. If the speed of the turbine is 50 rpm and efficiency is 82%, determine the available power and number of turbine units required for a specific speed of 740. Suggest a suitable turbine for the condition with reason.	CO2,3	4
Q6	List the major characteristics and constructional features of Noor Ouarzazate solar facility and its environmental and social impact.	CO4,5	4