JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

Supplementary Examination- 2026

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

COURSE CODE (CREDITS): 22B1WCE733 (3) MAX. MARKS: 75

COURSE NAME: PERENNIAL POWER STRUCTURES

COURSE INSTRUCTORS: Dr. Niraj Singh Parihar MAX. TIME: 2 Hours

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Note: *(a)All questions are compulsory. Marks are indicated against each question in square brackets.*

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

(c)Use of calculator is permitted.

Q.No	Question	CO	Marks
Q1	Give a brief description of different types of non-conventional energy resources. Discuss the relative merits of each type.	CO1,2	15
Q2	Describe the components and functional working of a metal cooled nuclear reactor with the help of a well described flow circuit.	CO2,4	10
Q3	Find the fuel required for operating a 200 MW nuclear reactor for a year using U-235 as sole fuel material. Assume 45% plant efficiency and 100% load factor.	CO2,3	10
Q4	Provide a brief outlook on different types of canning materials available for nuclear power plants. Also provide peculiar characteristics and application of each.	CO2	10
Q5	Discuss the suitability of various types of dams as per the site features. Also brief the major classifications of the hydropower projects.	CO4,5	15
Q6	Classify the solar power systems with brief detailing. Describe the basic features and working details of at least one major solar project.	CO1,4	15