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JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

Make-up Examination-Nov-2025

COURSE CODE (CREDITS): 18B1WCE639 (3) MAX. MARKS: 25

COURSE NAME: Open Channel Flow and Hydraulic Machine

COURSE INSTRUCTORS: Ashish Kumar MAX. TIME: 1 Hour 30 Minutes

Note: Note: (a) All questions are compulsory.

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

(c) Use of Calculator is allowed

Q.No	Question	CO	Marks
Q1	Differentiate between open channel flow and pipe flow. Draw the hydraulic gradient line and total energy line for both cases.	1	3
Q2	A flow of water of 0.1 m^3/s flows down in a rectangular flume of width 0.6 m and depth of low equal to 0.3 m. If the Chezy's coefficient C is 56 find the bottom of the slope.	1	5
Q3	Why we select the most economical section to design a channel? What is the criteria for most economical channel section?	1	3
Q4	Prove that for a trapezoidal channel of most economical section: Half of the top width = length of one side of sloping sides.	1	5
Q5	The depth of water at a certain section of a rectangular channel of 2 m wide, is 0.3 m. The discharge through the channel is 1.5m^3/s. Determine whether a hydraulic jump will occur and if so, find height of hydraulic jump.	2	4
Q6	The discharge of water through a rectangular channel of width 10 m, is 20 m^3/s when depth of flow of water is 1.5 m, calculate (i) the specific energy of flowing water (ii) critical depth and critical velocity	3	5

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