

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2026

B.Tech-VI Semester (CE)

COURSE CODE (CREDITS):18B1WCE639 (3)

MAX. MARKS: 15

COURSE NAME: Open Channel Flow and Hydraulic Machine

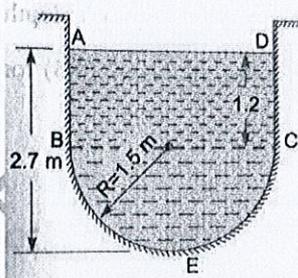
COURSE INSTRUCTOR: Ashish Kumar

MAX. TIME: 1 Hour

Note: (a) All questions are compulsory.

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

(c) Use of calculators is allowed

Q.No	Question	CO	Marks
Q1 (a)	What do you understand by (a) steady and unsteady flow; (b) uniform and non-uniform flow in case of channels.	1	2
Q1 (b)	Find the discharge of water through the channel as shown in figure. Take the value of Chezy's Constant = 60 and slope of bed as 1 in 2000. 	1	3
Q2	An irrigation channel of trapezoidal section, having side slopes 3 horizontal to 2 vertical, is to carry a flow of $10 \text{ m}^3/\text{s}$ on a bed slope of 1 in 5000. Find the dimensions of the channel for most economical section of the channel. Take Manning's $n = 0.012$	1	4
Q3	What is the significance of specific energy in open channel flow? Draw the specific energy curve and explain.	2	3
Q4	The discharge of water through a rectangular channel of width 8 m, is $15 \text{ m}^3/\text{s}$ when depth of flow of water is 1.2 m. Calculate the specific energy of flowing water. Also calculate the critical depth and critical velocity of flow.	2	3

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