JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2023

B.Tech-I Semester (CSE/IT/ECE/CE)

COURSE CODE(CREDITS): 18B1WCE 639 (3)

MAX. MARKS: 15

COURSE NAME: Open channel flow and Hydraulic Machine

COURSE INSTRUCTORS: Ashish Kumar

MAX. TIME: 1 Hour

Note: (a)All questions are compulsory.

(b)Marks are indicated against each question in square brackets.

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

Q1. Explain the following in brief.

[2]

(a) Rapidly varied flow and gradually varied flow in open channels .

(b) Subcritical flow, critical flow and supercritical flow

Q2. Find the discharge through a trapezoidal channel of width 8 m and side slope of 1 horizontal to 3 vertical. The depth of flow of water is 2.4 m and value of Chezy's constant, C= 50. The slope of the bed of the channel is given 1 in 4000.

[5]

Q3. Prove that for the rectangular channel of most economic section, hydraulic radius is half of the depth of flow.

[4]

Q4. (a) Explain the specific Energy and specific energy curve with neat diagram.

[3]

(b) Find the specific energy of the flowing through a rectangular channel of width 5 m when discharge is 10m³/s and depth of water is 3 m.

[1]