



DEPARTMENT OF CIVIL ENGINEERING

FINAL TERM EXAMINATION

Subject: Irrigation And Hydraulic Structures
Instructor: Engr Jebran Khan
Course code: CT-351

Duration: 4 hrs.
Total Marks: 50

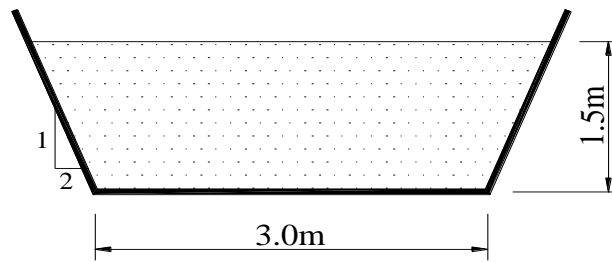
Note: Attempt all questions. Manage your time properly. Understanding question paper is the part of examination. Draw diagrams wherever necessary. Please refer to your notes for assistance copy from internet will marked less.

No. (01) (4+6)

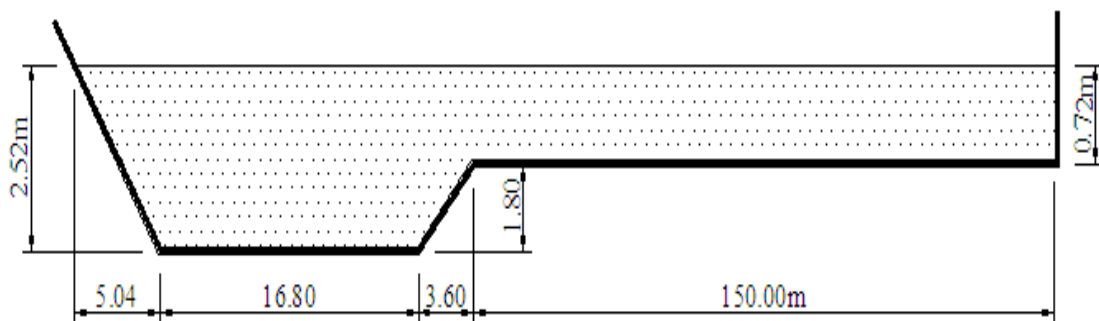
- a) Define open channel. What is meant by prismatic and non prismatic open channel?
- b) Discuss in detail types of flow in open channel.

No. (02) (5+5)

- a) Open channel of width = 3m as shown, bed slope = 1:5000, $d=1.5\text{m}$ find the flow rate using Manning equation, $n=0.025$.



- b) Open channel as shown, bed slope = 69:1584, find the flow rate using Chezy equation, $C=35$

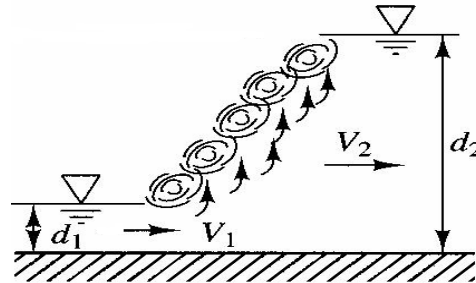




No. (03)

(4+6)

- Briefly describe classification of channel bed slopes.
- A 3-m wide rectangular channel carries $15 \text{ m}^3/\text{s}$ of water at a 0.7 m depth before entering a jump. Compute the downstream water depth and the critical depth



No. (04)

(20)

Design practical profile for a gravity dam with the following data:

- Maximum depth of water in the reservoir, $H = 30 \text{ m}$
- Specific gravity of dam material, $G = 2.4$
- Allowable compressive stress for the dam masonry $\sigma_{\text{all}} = 120 \text{ T/m}^2$
- Height of wave = 1.2 m and $\mu = 0.7$
- No uplift pressure, $C_u = 0$

THE END