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HYDRAULICS

NON-UNIFORM FLOW IN OPEN CHANNEL EXERCISE

TOPIC 3.1

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Chapter 3: Non - Uniform Flow in Open Channel by N Adilah A A Ghani

Communitising Technology

Exercise 3.1

A trapezoidal channel designed with 6 m width and side slope 1:2, calculate the critical depth when the flow rate is $17 \text{ m}^3/\text{s}$ using :

- Trial and Error
- Graph
- Design Chart

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Exercise 3.2

A trapezoidal channel with side slope of 2 horizontal to 1 vertical is to carry a flow for $16.7 \text{ m}^3/\text{s}$. For the bottom width of 3.6 m, calculate :

- a. critical depth
- b. critical velocity

using :

- i) Trial and Error
- ii) Design Chart

Answer : $y_c = 1.05 \text{ m}$

$v_c = 3.21 \text{ m/s}$