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Universiti Malaysia PAHANG

HYDRAULICS

NON-UNIFORM FLOW IN OPEN CHANNEL

EXERCISE

TOPIC 3.2

by

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Exercise 3.3

A rectangular channel of small slope has a channel width (b) = 6m; bottom slope (S_0) = 0.0016 and Manning coefficient (n) = 0.025, carries a discharge (Q) of 12m³/s; (use: g = 9.81 m/s²).

a) Compute the normal using algebraic method/trial and error method. [6 marks]

b) Compute the critical depth in this channel. [4 marks]

c) Construct the Diagram of Specific-Energy (SED) and determine the alternate depths y_1 and y_2 when E = 3/2 E_c. [10 marks]