

**CIVL 5076 Coastal Engineering
Fall Semester 2005**

Quiz No. 1

Name:

ID #:

Total marks: 10

Time allowed: 30 minutes

Attempt all the questions.

1. In deep water condition the water particle paths follow a geometrical figure. Which figure is that? [1]

Answer:

2. In deriving small amplitude wave theory, the flow is considered to be irrotational. What does it mean? [1]

Answer:

3. The total acceleration in x-direction is given as: $a_x = u \frac{\partial u}{\partial x} + w \frac{\partial u}{\partial z} + \frac{\partial u}{\partial t}$

Write down the relationship for total acceleration in z-direction and the physical meaning of every term. [2]

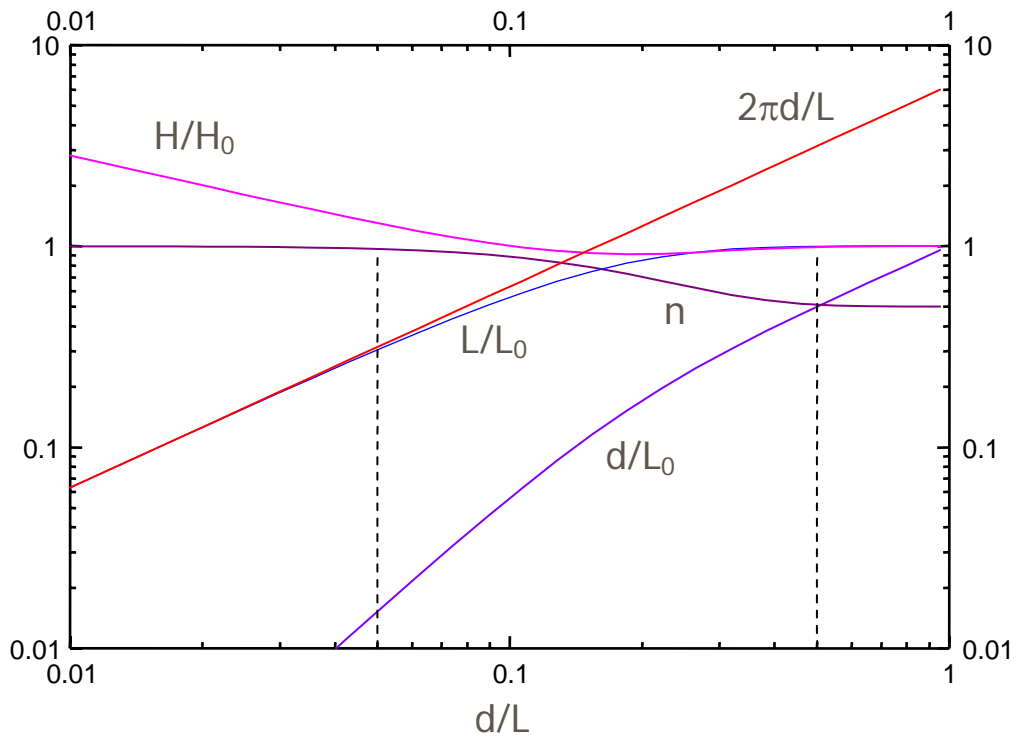
Answer:

4. Which one is correct? The deep water wave length depends on (a) the depth only, (b) depth and wave period, (c) wave period only, (d) dynamic pressure. [1]

Answer:

5. Sketch a typical wave profile. Show the vertical pressure distribution under crest and trough. Show the hydrostatic and dynamic pressure components on the figure. [3]
 Answer:

6. Using the following figure determine the wave length for a 2-sec wave in 10m deep seawater ($\rho=1030\text{kg/m}^3$). [2]



Answer: