

Unit 3 - Week 2 : FLUID STATICS

Course outline

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Week 2 : FLUID STATICS

- Concepts of Fluid Hydrostatics
- Measurement of Fluid Pressure and Fluid Hydrostatic Force
- Buoyancy, Metacentre, Stability and Rigid Body Motion
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Week 4 : FLUID DYNAMICS

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Live Session

Assignment 2

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2019-09-11, 23:59 IST.

1) In a static fluid, the pressure at a point is 1 point

- a. equal to the weight of the fluid above
- b. equal in all directions
- c. equal in all directions, only if its viscosity is zero
- d. always directed downwards

No, the answer is incorrect.
Score: 0

Accepted Answers:
b. equal in all directions

2) Fluid statics deals with 1 point

- a. viscous and pressure forces
- b. viscous and gravity forces
- c. gravity and pressure forces
- d. surface tension and gravity forces

No, the answer is incorrect.
Score: 0

Accepted Answers:
c. gravity and pressure forces

3) Gauge pressure at a point is equal to 1 point

- a. absolute pressure plus atmospheric pressure
- b. absolute pressure minus atmospheric pressure
- c. vacuum pressure plus absolute pressure
- d. none of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
b. absolute pressure minus atmospheric pressure

4) Center of pressure of a plane surface immersed in a liquid is 1 point

- a. Above the center of gravity of the plane surface
- b. At the center of gravity of the plane surface
- c. Below the center of gravity of the plane surface
- d. None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
c. Below the center of gravity of the plane surface

5) The condition of stable equilibrium for a floating body is 1 point

- a. The metacenter M coincides with the centre of gravity G
- b. The metacenter M is below centre of gravity G
- c. The metacenter M is above centre of gravity G
- d. The centre of buoyancy B is above centre of gravity G

No, the answer is incorrect.
Score: 0

Accepted Answers:
c. The metacenter M is above centre of gravity G

6) The metacentric height of a floating body is 1 point

- a. The distance between metacenter and centre of buoyancy
- b. The distance between the centre of buoyancy and centre of gravity
- c. The distance between metacenter and centre of gravity
- d. None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
c. The distance between metacenter and centre of gravity

7) A stream line is a line 1 point

- a. Which is along the path of a particle
- b. Which is always parallel to the main direction of flow
- c. Across which there is no flow
- d. On which tangent drawn at any point gives the direction of velocity

No, the answer is incorrect.
Score: 0

Accepted Answers:
c. Across which there is no flow
d. On which tangent drawn at any point gives the direction of velocity

8) For liquids, will capillarity rise (or fall) increase or decrease with the rise in temperature 1 point

- a. Increase
- b. Decrease
- c. Remain constant
- d. First decrease then increase

No, the answer is incorrect.
Score: 0

Accepted Answers:
b. Decrease

9) Atmospheric pressure held in terms of water column is 1 point

- a. 7.5 m
- b. 8.5 m
- c. 9.81 m
- d. 10.3 m

No, the answer is incorrect.
Score: 0

Accepted Answers:
d. 10.3 m

10) A submerged body will be in unstable equilibrium if 0 points

- a. Metacentre lies above the centre of gravity
- b. Metacenter is below the centre of gravity
- c. Metacenter coincides the centre of gravity
- d. Difficult to say

No, the answer is incorrect.
Score: 0

Accepted Answers:
b. Metacenter is below the centre of gravity

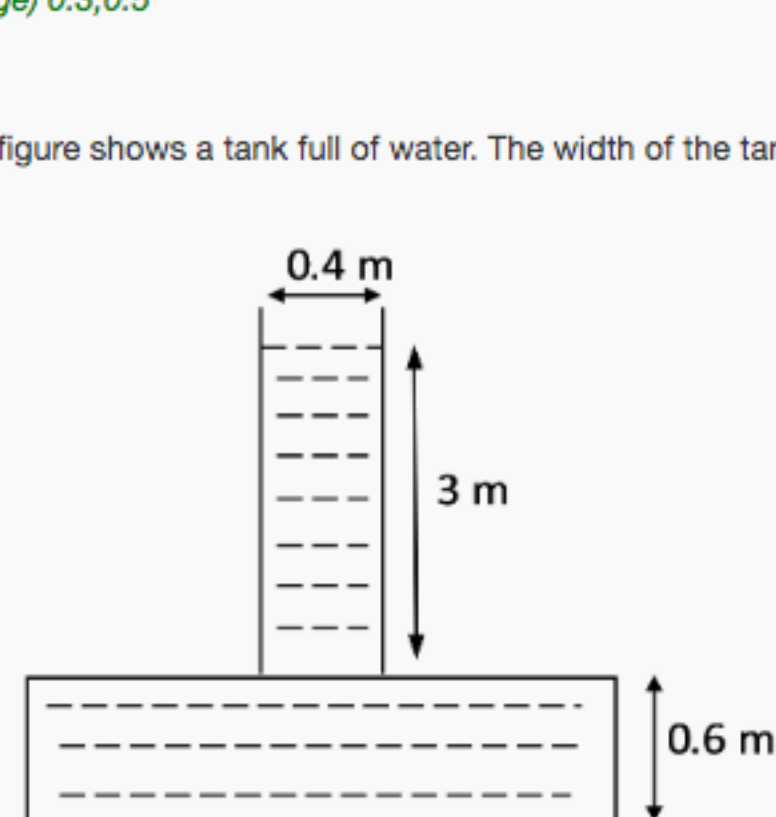
11) Calculate the capillary fall in a glass tube of 2.5 mm diameter when immersed vertically in mercury. Take surface tension as 0.52 N/m and angle of contact is 130° for water

Hint

No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: Range) 0.3,0.5

12) Below figure shows a tank full of water. The width of the tank is 2 m. 0 points



Find total pressure on the bottom of tank (in N).

Hint

No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: Range) 282400,282700

13) In the above problem find the weight of water in tank (in N). 2 points

Hint

No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: Range) 70400,70800

14) A stone weighs 392.4 N in air and 196.2 N in water. Compute the volume of stone (in cubic meter) and its specific gravity 4 points

- a. 0.02, 2
- b. 0.002, 2.4
- c. 2, 2
- d. 0.02, 1.4

No, the answer is incorrect.
Score: 0

Accepted Answers:
a. 0.02, 2