



KERALA AGRICULTURAL UNIVERSITY
B. Tech. (Agrl. Engg.) 2021 Admission
II Semester Final Examination – September 2022

Iden.1202

Fluid Mechanics and Open Channel Hydraulics (2+1)

Marks: 50
Time: 2 hours

I Fill in the blanks

(10x1=10)

1. Specific gravity is also called as
 2. Fluids which obey Newton law of viscosity are called
 3. The point of minimum area in a jet of water is called
 4. Euler's number is defined as the ratio of inertia force and
 5. A physical phenomenon involves **n** dimensional variables with **m** primary dimensions, the number of non-dimensional variables according to Pi theorem is
- State True or False**
6. The viscosity of liquids increase with increase in temperature.
 7. The unit of surface tension is Ns/m^2 .
 8. An orifice meter is used to measure the velocity of flow of fluid.
 9. The dimensionless number defined by the ratio of inertial force to viscous force is called Reynolds number.
 10. The discharge in an open channel corresponding to critical depth is Maximum.

II Write short notes on ANY FIVE of the following

(5x2=10)

1. Newton's law of viscosity
2. Manometers
3. Buoyancy and centre of buoyancy
4. Laminar and turbulent flow
5. Bernoulli's theorem
6. Minor losses in pipe flow
7. Similitude and similarity

III Answer ANY FIVE of the following

(5x4=20)

1. What is a flow net? What are its uses?
2. Differentiate between the Eulerian and Lagrangian methods of representing fluid flow.
3. Define the terms gauge pressure, vacuum pressure and absolute pressure.
4. Explain Rayleigh's method of dimensional analysis.
5. Briefly explain about various pressure measuring devices.
6. Describe working of a pitot tube.
7. Define critical depth and hydraulic jump.

IV Write an essay on ANY ONE of the following

(1x10=10)

1. Define metacentre. How is the metacentric height of a body determined experimentally?
2. What are the various Flow measuring devices? Explain the working of a Venturimeter.
