

Assignment: 4 THE ENERGY EQUATION AND ITS APPLICATION

1. Derive an expression for the discharge through a venturimeter and compare it with orifice meter for measurement of flow through orifice.
2. Derive expression for discharge over rectangular notch.
3. Derive an expression for Bernoulli's theorem and write the assumptions made in it.
4. Define coefficient of discharge and coefficient of velocity.
5. Derive an expression for the discharge of water over a V-notch (or Triangular notch) with usual notations.
6. Derive Euler's equation of motion along a stream line.
7. What is pitot tube? How is it used to measure the velocity of flowing water in a pipe?
8. Explain vena-contracta. Discuss the characteristics of flow at venacontracta, in case of orifice.
9. Explain momentum principle. What are its applications?