

ANNAMACHARYA UNIVERSITY
CIVIL ENGINEERING DEPARTMENT

Name of the Lab: Fluid Mechanics Lab

Name of the Lab in-charge: Dr. D. Gouse Peera

S.No.	Equipment Photo	Name of the Equipment	Specifications	Price
1.	 A photograph of a Bernoulli's Apparatus setup. It consists of a green metal frame holding a vertical pipe system. The pipe has a horizontal section with a venturi meter and a vertical section with a U-tube manometer. The entire apparatus is mounted on a green base unit with a control panel and a pump.	Bernoulli's Apparatus	<p>Pump Capacity: 1/2 HP, 1 Ph.</p> <p>Collecting Tank Area: 0.041 m^2.</p> <p>Overhead tank connected to Venturimeter with connections to Piezometer tubes at different sections.</p>	52,304/-
2.	 A photograph of a Major Losses Apparatus. It features a long horizontal blue pipe supported by a blue frame. A vertical green control unit is connected to the pipe. A blue sign on the wall above the pipe provides technical specifications: Area of Measuring Tank, "A" = 0.075 m ² ; Length of pipe, "L" = 1.4 m; Kinematic viscosity, "v" = 1.00 x 10 ⁻⁶ m ² /s; Diameter of pipe, "d" = 27, 21 and 15 mm, (G.I).	Major Losses	<p>Pump Capacity : 1/2 HP, 1 Ph.</p> <p>Area of Measuring Tank, "A" = 0.075 m^2</p> <p>Length of pipe, "L" = 1.4 m.</p> <p>Kinematic viscosity, "v" = $1.00 \times 10^{-6} \text{ m}^2/\text{s}$</p> <p>Diameter of pipe, "d" = 27, 21 and 15 mm, (G.I)</p>	54,172/-

3.		Minor Losses	<p>Pump Capacity : 1/2 HP, 1 Ph.</p> <p>Collecting Tank Area : $0.075m^2$.</p> <p>Nominal Dia of Pipe : 1" NB (27mm ID).</p> <p>Diameter of 1/2" pipe : 15 mm</p>	70,000/-
4.		Orifice and Mouth Piece	<p>Pump Capacity: 1/2 HP, 1 Ph.</p> <p>Area of collecting tank = $0.065 m^2$</p> <p>Dia of Orifice: 7,9, and 11 mm</p> <p>Types of mouth piece: Cylindrical, Convergent, and Divergent</p>	61,731/-

5.		Reynolds Number	<p>Pump Capacity: 1/2 HP, 1 Ph.</p> <p>Diameter of glass tube = 0.03 m</p> <p>ID of the glass tube 'D' = 0.02 m</p> <p>Area of collecting tank 'a' = 0.041m²</p>	50,436/-
6.		Hydraulic Flume	<p>Pump capacity = 3 HP</p> <p>Length of flow channel, L = 6000 mm</p> <p>Height of the channel, H = 250mm</p> <p>Width of the channel, W = 150 mm</p> <p>Tank material = Stainless Steel</p> <p>Sump Tank capacity = 350 liters</p> <p>Discharge Measurement = using venturi meter</p> <p>Venturi meter Inlet area = 0.00159 m² (D_i=45 mm)</p> <p>Venturi meter Throat area = 0.000398 m² (D_t=22.5 mm)</p> <p>Head Measurement in Venturi meter = using Manometer</p> <p>Head Measurement in flow channel = using point gauge</p> <p>Flow control = using ball valve</p>	4,32,585/-

7.		<p>Venturi Meter and Orifice Meter</p>	<p>Pump Capacity: 1/2 HP, 1 Ph. Area of Measuring tank, 'A' = 0.075 m^2 Diameter of the Venturi meter (throat), 'd' = 13 mm Diameter of the Venturi meter (Inlet), 'D' = 25 mm</p>	63,513/-
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