Code No: 154AZ

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech II Year II Semester (Special) Examinations, January/February - 2021
FLUID MECHANICS AND HYDRAULIC MACHINES
(Mechanical Engineering)

Time: 2 Hours **Max. Marks: 75**

Answer any five questions
All questions carry equal marks
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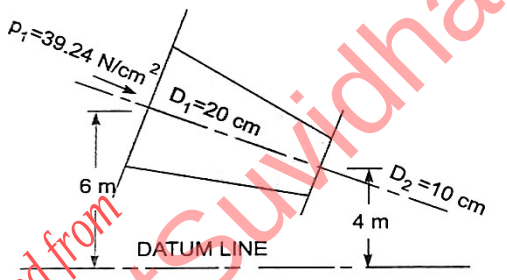
1. Define pressure. Obtain an expression for pressure intensity at a point in a fluid. [15]

2. Differentiate between:
   a) Absolute and gauge pressure
   b) Simple manometer and differential manometer
   c) Piezometer and pressure gauge. [5+5+5]

3. Write Euler's equation of motion along a stream line and integrate it to obtain Bernoulli's equation. State all the assumptions. [15]

4. The water is flowing through a pipe having diameter of 20 cm and 10 cm at section 1 and 2 respectively. The rate of flow through pipe is 35 litres/s. The section 1 is 6m above datum and section 2 is 4 m above datum. If the pressure at section 1 is 39.24 N/cm ^{2}, find the intensity of pressure at section 2. [15]



5. How will you measure the loss of head due to friction in pipes by using:
   a) Darcy formula and
   b) Chezy's formula? [7+8]

6. Obtain an expression for boundary shear stress in terms of momentum thickness. [15]

7. What do you mean by gross head, net head and efficiency of the turbine? Explain the different types of the efficiencies of a turbine. [15]

8. What is meant by Priming of a pump? What are the different priming arrangements employed for small and big pumping units? [15]

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