Total No. of Questions : 8] *[Total No. of Printed Pages : 3*

Roll No .....

ME-404-CBGS

B.Tech., IV Semester

Examination, December 2020

Choice Based Grading System (CBGS)

Fluid Mechanics

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any five questions.

ii) All questions carry equal marks.

iii) In case of any doubt or dispute the English version question should be treated as final.

1. a) What do you mean by centre of Pressure? Explain.

   b) 4m × 4m square tank is filled with water. Height of tank is 2m. Find total pressure and pressure centre on vertical wall.

2. a) What are the different type of flow? Differentiate compressible and incompressible flow.

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b) What do you mean by Pressure scale? Define absolute pressure.

3. In a two dimensional flow the component of velocity along the x axis is given by $u = 3x - 2x^2y + y^3$. Determine the component of velocity along y axis for condition of continuity of flow.

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4. Find power Loss due to friction in a circular pipe when length of pipe 300m, diameter 15cm and discharge 28 l/s and $f = 0.01$.

5. a) Explain Reynold's transport theorem.

b) Deduce Euler's equation.

6. What is Bernoullis Theorem? What are the limitations of Bernoullis Theorem?

7. Deduce Navier strok's equation.

8. Write short note on any four of following.
   a) Specific weight
   b) Specific volume
   c) Cohesion
   d) Adhesion
   e) Surface tension
   f) Density

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