Roll No.

Total No. of Pages: 01

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M.Tech. (ME) (Sem.-2)

COMPUTATIONAL FLUID DYNAMICS

Subject Code: MME-504 M.Code: 38205

Time: 3 Hrs. Max. Marks: 100

INSTRUCTION TO CANDIDATES:

- 1. Attempt any FIVE questions out of EIGHT questions.
- 2. Each question carries TWENTY marks.
- Q1 a) Write a note on history of CFD.
 - b) Explain in detail the recent advances in computational techniques.
- Q2 a) Explain physical and mathematical problems.
 - b) Write various types of governing differential equations.
- Q3 Explain in detail Finite Volume Method and Spectral Method.
- Q4 Explain and derive Two-dimensional conduction through a plate unsteady-state problem.
- Q5 Explain Explicit and Implicit methods. Differentiate between the Two.
- Q6 a) What do you mean by viscous incompressible flows?
 - b) Derive equation for boundary layer flow over a flat plate.
- Q7 Explain the following algorithms for Navier-Stokes Equations:
 - a) MAC Method
 - b) Simple algorithm
- Q8 What are the different types of fluid flows? Write governing equations for each.

NOTE: Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.

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