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.