(Following Paper ID and Roll No. to be filled in your Answer Books)

Paper ID : 2012302 Roll No.

B.TECH.

Regular Theory Examination (Odd Sem-VII) 2016-17

COMPUTATIONAL FLUID DYNAMIC

Time : 3 Hours *Max. Marks : 100*

Section - A (10×2=20)

1. a) Write governing equation of fluid dynamics?

b) Write continuity momentum and energy equation?

c) Write elliptic equations?

d) What is finite difference method.

e) What is finite volume method?

f) What is fully implicit scheme?

g) What is steady state?

h) Write the pressure gradient from?

i) What do you understand by power law?

j) Write the Navier stoke's eqn for 3 dimensional flow.

Section - B (5×10=50)

1. Explain basic concept of fluid dynamics?

2. What is general methods for first and second order accuracy?

3. Explain one dimensional unsteady heat conduct?

4. Describe mometonad energy equation?

5. Describe high and low Reynold number schemes?

Section - C (2×15=20)

1. Derive turbulent KE equation?

Or

What is mathematical behavior of PDE on CFD?

2. Derive elliptic and parabolic equation by finite difference method?

Or

Explain Itrative solution methods?

3. Derive and describe 1D unsteady heat conduction by explicit method?

Or

Derive 1D steady state equation by finite volume method?

4. Explain finite volume method for diffusion?

Or

Explain power law and Quick schemes?

5. Explain finite volume method for convection diffusion?

Or

Discus in detail High and low.

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