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Question Paper Code: 52195

M.E. DEGREE EXAMINATION, NOV 2016

Elective

CAD / CAM

15PCD515 - COMPUTATIONAL FLUID DYNAMICS IN MANUFACTURING

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART - A (5 x 20 = 100 Marks)

1. (a) Briefly explain about

(i) Initial and boundary conditions. (10)

(ii) Initial and boundary value problems. (10)

Or

(b) Explain in detail about the usage of uniform and non-uniform grids with a suitable example. (20)

2. (a) Write a detailed procedure for solving dimensional steady state problem conduction heat transfer problem. (20)

Or

(b) Write a detailed procedure for solving two-dimensional transient problem in conduction heat transfer. (20)

3. (a) State the governing equations of incompressible fluid flow and explain about stream function. (20)

Or

(b) Briefly explain about

(i) Boundary layer flow. (10)

(ii) Finite difference approach. (10)

4. (a) With a real world example, explain two dimensional convection and diffusion. (20)

Or

(b) Explain in detail about the simulation techniques available in FEM. (20)

5. (a) List the turbulence models and compare models based on the type of problem and accuracy. (20)

Or

(b) Explain in detail about heat transfer using standard codes. (20)
