

Roll No.

23125

**M.Tech. 3rd Semester (ME)
(Manufacturing & Automation)
Examination-December, 2016**

SIMULATION & ANALYSIS

Paper : 953

Time : 3 hours

Max. Marks : 100

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard will be entertained after the examination.

Note: There are **eight** questions in total.

Students have to attempt only **five** questions. All questions carry equal marks.

1. What is simulation ? Explain it with its types. (20)

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(1)

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2. Explain flow shop system and Job Shop System in detail. (20)

3. What are the simulation languages ? Explain the comparisons between simulation language and general purpose languages. (20)

4. What is FEM ? How it works ? Discuss integral formulations and variation methods for FEM. (20)

5. Explain :
- (i) Finite Element Discretization (5)
 - (ii) Interpolation functions (5)
 - (iii) Model boundary value problem (5)
 - (iv) Lagrange's and Hermit Polynomials (5)

6. What are statistical procedures for developing credible model ? Explain with suitable example. (20)

7. What are external and internal equilibrium equations ? Explain 1-D stress strain relations. (20)

8. Explain :
- (i) Galerkin approach (10)
 - (ii) 2-D FEM formulation with suitable example. (10)