

Code No: H1501/R13

M. Tech. II Semester Supplementary Examinations, May-2017

OPTIMIZATION AND RELIABILITY

(Common to MD, MED and CAD/CAM)

Time: 3 Hours**Max. Marks: 60**

Answer any FIVE Questions

All Questions Carry Equal Marks

1. Minimize $3x_1^2 + 4x_2^2 + 5x_3^2$ such that $x_1 + x_2 + x_3 = 10$ using Lagrange multiplier method.
2. a What is the reason for possible divergence of Newton's method?
b What are the types of classical optimization techniques?
3. How do you perform
a. crossover and
b. Mutation in GA? Explain with examples.
4. Write the typical optimization model for a machining problem. Discuss the objective functions and the constraints involved.
5. a Explain Pareto's analysis.
b What is Non-dominated sorted GA? Explain.
6. Explain the optimization model of a weight of a cantilever beam
7. a Write the differences between GA and GP.
b Explain Nelder Mead's Simplex method
8. a Discuss the procedural steps involved in Non-dominated sorted GA.
b What are the objectives of GA,
