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 Langrfange 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 inGA? 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,

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