

**Ref. No.: Ex/PG/POW/PE/T/113B/2025**

**M. E. POWER ENGG. 1st Year 1st SEMESTER EXAMINATION 2025**

**Optimization Techniques**

**TIME: THREE HOURS**

**FULL MARKS: 100**

Answer any five questions

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|--------------------------------------------------------------------------------|----|
| 1. a) What is meta-heuristic optimization?                                     | 5  |
| b) Classify meta-heuristic algorithm.                                          | 7  |
| c) What are the common characteristics of different meta-heuristic algorithms? | 8  |
| 2. Describe briefly differential evolution.                                    | 20 |
| 3. Give a note on biogeography-based optimization.                             | 20 |
| 4. Describe briefly squirrel search algorithm.                                 | 20 |
| 5. Describe briefly grey wolf optimization.                                    | 20 |
| 6. Describe briefly gravitational search algorithm.                            | 20 |
| 7. Give a note on Hopfield neural network.                                     | 20 |
| 8. Describe linear programming method and quadratic programming method.        | 20 |