Optimization Techniques

Total points 10/10

Unit3

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✓ 1.When the gradient descent method is started from a point near the solution, it will converge very quickly. 1/1

- [ ] True
- [x] False ✓

✓ 2.When Newton's method is started from a point near the solution, it will converge very quickly. 1/1

- [x] Option 1 ✓
- [ ] False

✓ 3.Determine the gradient of the function x^2-2y^2-4y+6 at point (0, 0)? 1/1

- ∇f = 2i − 4j
- ∇f = 0i − 4j ✓
- ∇f = 0i + 0j
- ∇f = −4i − 4j

✓ 4.Determine the minimum of the function f(x, y) = x^2 + y^2 ? Use the point (2, 1) as the initial estimate of the optimal solution. Conduct one iteration using newton metnod 1/1

- (2,1)
- (−6,−3)
- (0,0) ✓
- (1,−1)

✓ 5.We need to enclose a field with a fence. We have 500 feet of fencing material with a building on one side of the field where we will not need any fencing. Determine the maximum area of the field that can be enclosed by the fence. Use Newton Method 1/1

- x=125, y=250 ✓
- x=150, y=200
- x=125, y=100
- x=200, y=150

✓ 6.For what value of x , is the function x^2 – 2x – 6 minimized? 1/1

- 0
- 1 ✓
- 5
- 3

✓ 7.Constraint in an LP model restricts 1/1

- value of the objective function
- value of the decision variables
- use of the available resources
- all the options ✓

✓ 8.In simplex method, the feasible basic solution must satisfy the 1/1

- non-negativity constraint ✓
- negativity constraint
- basic constraint
- common constraint

✓ 9.If two constraints do not intersect in the positive quadrant of the graph then 1/1

- (●) the problem is infeasible. ✓
- ( ) the solution is unbounded.
- ( ) One of the constraints is redundant.
- ( ) None of the options

✓ 10.In the optimal simplex table cj-zj=0 value indicates 1/1

- ( ) unbounded solution
- ( ) cycling
- ( ) Alternative solution
- (●) infeasible solution. ✓