# 🔥 TOP MOST IMPORTANT QUESTIONS (Very High Probability)

## ⭐⭐⭐⭐⭐ 1. Simpson's 3/8 Rule

**PYQ Frequency: 6+ Times**

- Evaluate integral using Simpson's 3/8 Rule.
- Derive Simpson's 3/8 Rule.
- Solve numerical based on Simpson's 3/8 Rule.

**Must Learn Formula:**

$I=3h/8[y0+3y1+3y2+2y3+\cdots+yn]$

---

## ⭐⭐⭐⭐⭐ 2. Simpson's 1/3 Rule

**Repeated Many Times**

- Derive Simpson's 1/3 Rule.
- Evaluate integral using Simpson's 1/3 Rule.
- Compare Trapezoidal and Simpson's 1/3 Rule.

Formula:

$I=h/3[y0+4y1+2y2+4y3+\cdots+yn]$

---

## ⭐⭐⭐⭐⭐ 3. Trapezoidal Rule

**Repeated Direct Numerical**

- Derive Trapezoidal Rule.
- Numerical using Trapezoidal Rule.

Formula:

$I=h/2[y0+yn+2(y1+y2+\cdots+yn-1)]$

---

## ⭐⭐⭐⭐⭐ 4. Gauss Elimination Method

**Very Frequently Asked**

Questions:

- Solve simultaneous equations using Gauss Elimination.
- Explain algorithm.
- Advantages and disadvantages.

---

## ⭐⭐⭐⭐⭐ 5. Gauss-Seidel Method

**Repeated 2023 & 2024**

Questions:

- Solve equations using Gauss-Seidel.
- Explain iterative process.
- Difference from Jacobi Method.

---

# ⭐⭐⭐⭐ High Probability Questions

## 6. Numerical Differentiation

Questions:

- Find dy/dxdy/dxdy/dx from tabulated data.
- Find first derivative.
- Find second derivative.

---

## 7. Crout's Method

Questions:

- Solve equations using Crout's decomposition.
- Explain LU decomposition.

---

## 8. Jacobi Method

Questions:

- Explain Jacobi Iteration Method.
- Difference between Jacobi and Gauss-Seidel.

---

# ⭐⭐⭐ Medium Probability Questions

## 9. Relaxation Method (SOR)

Questions:

- Explain Relaxation Method.
- Advantages over Gauss-Seidel.

---

## 10. Gauss-Jordan Method

Questions:

- Solve equations using Gauss-Jordan Method.
- Difference between Gauss Elimination and Gauss-Jordan.

---

# 🎯 Expected 14-Mark Questions

1. Derive Simpson's 1/3 Rule and solve a numerical.
2. Derive Simpson's 3/8 Rule and solve a numerical.
3. Explain and solve simultaneous equations using Gauss Elimination Method.
4. Explain Gauss-Seidel Method with numerical example.
5. Compare Jacobi and Gauss-Seidel Methods.
6. Solve simultaneous equations using Crout's Method.
7. Explain Numerical Differentiation with formulas.

---

# 🎯 Expected 7-Mark Questions

1. Trapezoidal Rule.
2. Numerical Differentiation.
3. Gauss-Jordan Method.
4. Jacobi Method.
5. Relaxation Method.
6. Difference between Jacobi and Gauss-Seidel.
7. Difference between Gauss Elimination and Gauss-Jordan.

---

# 🚨 If You Have Only 1 Day Left

Study in this order:

### Priority 1 (Guaranteed Marks)

1. Simpson's 3/8 Rule
2. Simpson's 1/3 Rule
3. Trapezoidal Rule

### Priority 2

4. Gauss Elimination
5. Gauss-Seidel

## Priority 3

6. Numerical Differentiation
7. Crout's Method

## Priority 4

8. Jacobi
9. Gauss-Jordan
10. Relaxation

These first **5 topics alone can cover a major portion of Unit-2 questions based on the PYQ trend you uploaded.**