Mathematics-III Unit-2 PYQ Questions

🔴 Numerical Integration

Simpson’s 3/8 Rule

1. **June 2025:** Evaluate given tabular data using **Simpson’s 3/8 rule**.
2. **Dec 2024:** Apply **Simpson’s 3/8 rule** to evaluate integral for six digits.
3. **June 2024:** Use **Simpson’s 3/8 rule** to solve the given integral.
4. **Nov 2023:** Find approximate value using **Simpson’s 3/8 rule**.
5. **June 2023:** Use **Simpson’s 1/3 and 3/8 rule** to evaluate integral.
6. **June 2022:** Evaluate integral by **Trapezoidal rule and Simpson’s 3/8 rule**.

Simpson’s 1/3 Rule

7. **June 2023:** Use **Simpson’s 1/3 and 3/8 rule** to evaluate the integral.
8. **June 2023:** Use **Simpson’s rule** to approximate the value of an integral.

Trapezoidal Rule

9. **June 2023:** Compute value of integral by **Trapezoidal Rule**.
10. **June 2022:** Evaluate integral by **Trapezoidal rule**.

🔴 Numerical Differentiation

11. **Dec 2024:** Find dy/dxdy/dxdy/dx at x=1.5x = 1.5x=1.5 from the given table.
12. **Nov 2023:** Find f′(1.1)f'(1.1)f′(1.1) and f′′(1.1)f''(1.1)f′′(1.1) from the given table.

🔴 Gauss Elimination Method

13. **June 2025:** Solve the given system of equations using **Gauss Elimination Method**.
14. **June 2024:** Apply **Gauss Elimination Method** to solve simultaneous equations.

🔴 Gauss-Seidel Method

15. **Dec 2024:** Solve system of equations using **Gauss-Seidel Method**.
16. **June 2023:** Solve system of equations using **Gauss-Seidel Iteration Method**.

🟡 Crout’s Method

17. **June 2022:** Solve simultaneous linear equations using **Crout’s Method**.

PYQ Frequency Ranking

Topic	Frequency	Priority
Simpson’s 3/8 Rule	6 times	🔴 Must Study
Trapezoidal Rule	2 times	🔴 Must Study
Simpson’s 1/3 Rule	2 times	🔴 Must Study
Gauss-Seidel Method	2 times	🔴 Must Study
Gauss Elimination	2 times	🔴 Must Study
Numerical Differentiation	2 times	🟡 Important
Crout’s Method	1 time	🟡 Important
Gauss-Jordan	Not clearly visible	🟢 Optional
Jacobi Method	Not clearly visible	🟢 Optional
Relaxation Method	Not visible	🟢 Optional

One-Night Study Order

1. Simpson’s 3/8 Rule
2. Trapezoidal Rule
3. Simpson’s 1/3 Rule
4. Gauss-Seidel Method
5. Gauss Elimination Method

6. Numerical Differentiation
7. Crout’s Method
8. Gauss-Jordan / Jacobi / Relaxation only if time remains.