🔥 Mathematics-III (BT-401) Unit-4: Transform Calculus

🎯 Top 10 Most Important Questions for RGPV 2026

Based on:

✅ Previous Year Questions (PYQ)

✅ RGPV Pattern

✅ Repeated Numerical Problems

✅ High-Weightage Topics

---

1. Define Laplace Transform and find the Laplace Transform of standard functions.

⭐⭐⭐⭐⭐ Very High Probability

---

2. Explain the Properties of Laplace Transform with suitable examples.

⭐⭐⭐⭐⭐ Very High Probability

(Properties like Linearity, Shifting, Differentiation, Integration)

---

3. Find the Laplace Transform of a Periodic Function.

⭐⭐⭐⭐⭐ Very High Probability

(Favourite RGPV Numerical)

---

4. Find the Inverse Laplace Transform using Partial Fraction Method.

⭐⭐⭐⭐⭐ Very High Probability

---

5. Find the Inverse Laplace Transform using Convolution Theorem.

⭐⭐⭐⭐⭐ Very High Probability

---

6. State and Prove the Convolution Theorem.

⭐⭐⭐⭐ Very High Probability

---

7. Evaluate definite integrals using Laplace Transform.

⭐⭐⭐⭐ High Probability

---

8. Solve Ordinary Differential Equations (ODEs) using Laplace Transform.

⭐⭐⭐⭐⭐ Very High Probability

(Most Repeated Numerical)

---

9. Define Fourier Transform and obtain Fourier Transform of standard functions.

⭐⭐⭐⭐ High Probability

---

10. Differentiate between Laplace Transform and Fourier Transform.

⭐⭐⭐ Medium Probability

🔥 TOP 5 MUST STUDY QUESTIONS

If exam is tomorrow, study these first:

1. ODE using Laplace Transform

2. Inverse Laplace Transform

3. Laplace Transform Properties

4. Periodic Function using Laplace Transform

5. Convolution Theorem

🎯 Expected 14-Mark Questions

1. Solve a differential equation using Laplace Transform.
2. Find inverse Laplace Transform using different methods.
3. Explain and prove Convolution Theorem.
4. Find Laplace Transform of a periodic function.
5. Explain Fourier Transform with applications.

🎯 Expected 7-Mark Questions

1. Definition of Laplace Transform.
2. Properties of Laplace Transform.
3. Inverse Laplace Transform.
4. Convolution Theorem.
5. Fourier Transform.

📊 Unit-4 Priority Order

🔴 Must Study

- Laplace Transform
- Properties of Laplace Transform

- Inverse Laplace Transform
- ODE using Laplace Transform
- Periodic Functions

🟡 Important

- Convolution Theorem
- Evaluation of Integrals

🟢 Optional

- Fourier Transform (basic theory)

👉 These 10 questions cover almost the entire Unit-4 syllabus and have the highest chance of appearing in the RGPV Mathematics-III exam.