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Department of Research & Development
Mid - Term Examinations - SEPTEMBER 2024

Odd Semester: Ph.D. Course Work	Date: 27-09-2024
Course Code: MAT 828	Time: 9:00am – 10:30am
Course Name: Applied Analysis	Max Marks: 50
Department: Mathematics	Weightage: 25%

Instructions:

- (i) Read all questions carefully and answer accordingly.
- (ii) Do not write anything on the question paper other than roll number.

Part A

Answer ALL the Questions. Each question carries 5 marks.		4Qx5M=20M
1	Define Inner product and matrices with examples.	5 Marks
2	Define symmetric bilinear form and quadratic form.	5 Marks
3	State the spectral theorem.	5 Marks
4	Define Orthogonal matrices and its properties.	5 Marks

Part B

Answer ALL Questions. Each question carries 15 marks.		2Qx15M=30M
5	State and prove Inverse function theorem.	15 Marks
6	State and prove Implicit function theorem.	15 Marks