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Electric Machine- 1 (Lab) — Complete Syllabus

BTEUP Diploma in Electrical Engineering • 3rd Semester • Session 2026-27
Subject 3.5 (Practical) • Total 100 Marks • 2 Credits • L 0 - P 4 • Perform any 10 of 15 practicals

Please note — cover year vs approval: BTEUP's own file for this curriculum prints "YEAR 2025-2026" on its cover, while carrying the approval line "UPDATED AND APPROVED BY BOARD OF TECHNICAL EDUCATION U.P. LUCKNOW IN C.D.C MEETING HELD ON 16.07.2026" on every page. It is filed in BTEUP's 2026-27 folder (folder2627), so it is treated here as the 2026-27 syllabus on the strength of that approval. The scheme it carries is identical, subject for subject and mark for mark, to the 2025-26 scheme.

About this document: This is the lab for the theory paper 3.2 (Electric Machine- 1). The PDF lists 15 practicals and says to perform any ten.

Examination Scheme

Code	Paper	Type	L - P	Credits	Internal	External	Total
3.5	Electric Machine- 1 (Lab)	Practical	0 - 4	2	60	40 (3 hrs)	100
Electric Machine- 1 (Lab) Total				2	60	40	100

Practical Work

- Reverse the direction of rotation of the DC shunt motor.
- Perform brake test on DC shunt motor.
- Control the speed of DC shunt motor by different methods.
- Control the speed of DC series motor by different methods.

- Perform the brake test of DC series motor.
- No load and Full Load Characteristics of Self Excited DC Shunt Generator.
- Load Characteristics of Self Excited DC Series Generator.
- Determine regulation and efficiency of single-phase transformer by direct loading.
- Perform open circuit and short circuit test on single phase transformer to determine voltage regulation and efficiency.
- Finding the Equivalent Circuit Constants of Single-Phase Transformer by conducting O.C and S.C Tests.
- Perform parallel operation of two single phase transformers to determine the load current sharing, apparent and real power load sharing.
- Perform parallel operation of two single phase transformers and determine the apparent and real power load sharing.
- Perform polarity test on a single-phase transformer whose polarity markings are masked.
- Connect the autotransformer in step-up and step-down modes noting the input/output readings.
- Breakdown Test to determine the Dielectric Strength of Transformer Oil.

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Source: BTEUP 2nd Year curriculum (folder2627) — cover prints YEAR 2025-2026, but the approval line 'UPDATED AND APPROVED BY BOARD OF TECHNICAL EDUCATION U.P. LUCKNOW IN C.D.C MEETING HELD ON 16.07.2026' appears on every page (95 times); treated as the 2026-27 curriculum. Topic lists follow the official syllabus; short explanations are the author's own plain-English summaries, not syllabus text. Please confirm with your own polytechnic for any local changes.