

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Supplementary Winter Examination – 2023

Course: B. Tech.

Branch: Electronics Engineering

Semester: IV

Subject Code & Name: Electrical Machines and Instruments (BTES401)

Max Marks: 60

Date: 16/1/2024

Duration: 3Hr.

Instructions to the Students:

- 1. All the questions are compulsory.*
- 2. The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in () in front of the question.*
- 3. Use of non-programmable scientific calculators is allowed.*
- 4. Assume suitable data wherever necessary and mention it clearly.*

	(Level/CO)	Marks
Q. 1 Solve Any Two of the following.		12
A) Define DC Generator. Describe the Self-excited types of DC generators.	CO1	6
B) Derive the equation of EMF for a DC Machine. State the meaning and units of the symbols used.	CO1	6
C) Explain the Construction of a DC Machine with a neat diagram.	CO1	6
Q.2 Solve Any Two of the following.		12
A) What is hunting? Explain its causes and prevention in synchronous motors.	CO3	6
B) Write a Short note on the synchronous condenser.	CO3	6
C) Explain the Construction and working of a 3-phase induction motor.	CO2	6
Q. 3 Solve Any Two of the following.		12
A) Explain an AC servo motor. List the applications of a servo motor.	CO2	6
B) Explain the working mechanism with a neat diagram and state the applications of a Hysteresis motor.	CO3	6
C) Explain the operation of a variable reluctance motor with its principle.	CO3	6
Q.4 Solve Any Two of the following.		12
A) Explain the operating principle of Hall Effect transducers. Discuss any two applications where these transducers are commonly used.	CO4	6
B) Explain the strain gauge transducer with its application.	CO4	6
C) Explain the construction and working of the LVDT.	CO4	6

Q. 5	Solve Any Two of the following.		12
A)	What is telemetry? Explain the telemetry system using a neat block diagram.	CO5	6
B)	Write a short note on the digital Tachometer.	CO5	6
C)	Define vibration, electrical telemetry, thickness, humidity, and thermal conductivity with one example in terms of electronics.	CO5	6

***** End *****