DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Regular End Semester Examination – Summer 2022

Course: B. Tech. S.E Branch : Electronics Engineering Semester : IV

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

Max Marks: 60 Date: 12/08/2022 Duration: 3.45 Hr.

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.**		
A)	A 220V Shunt Motor has Ra = 0.5 Ω, Ia = 40A, Rsh= 220 Ω Find Back EMF, Load Current and Shunt Current	**CO1,CO2, CO3**	**6**
B)	Explain Construction and Working Principe of DC Generator	**CO1,CO2, CO3**	**6**
C)	Derive EMF Equation of DC Machine	**CO1,CO2, CO3**	**6**
Q.2	**Solve Any Two of the following.**		
A)	What is Synchronous Condenser? Explain with the help of Phasor Diagram its Operation	**CO1,CO2, CO3**	**6**
B)	Explain the Procedure of V- Curve in case of Synchronous Motor	**CO1,CO2, CO3**	**6**
C)	Explain Construction and Working Principle of Induction Motor	**CO1,CO2, CO3**	**6**
Q. 3	**Solve Any Two of the following.**		
A)	What is the Principle and Working of Hysterisis Motor? Explain Briefly	**CO1,CO2, CO3**	**6**
B)	Explain the working of Variable Reluctance Stepper Motor	**CO1,CO2, CO3**	**6**
C)	How Many Types of Servomotors, Explain in Details?	**CO1,CO2, CO3**	**6**
Q.4	**Solve Any Two of the following.**		
A)	What is the need of Signal Conditioning and Explain its Types	**CO4**	**6**
B)	How Strain- Gauge works? Explain its Types.	**CO4**	**6**
C)	State selection criteria of Transducer for suitable application	**CO4**	**6**
Q. 5	**Solve Any Two of the following.**		
A)	Explain XY recorder and its applications	**CO4, CO5**	**6**
B)	Explain Electrical Telemetry, Thickness & Humidity measurement	**CO4, CO5**	**6**
C)	How gas analyzer works?	**CO4, CO5**	**6**

***** End *****