DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE – RAIGAD -402 103

Semester Examination – Nov - 2019

SY

Branch: Electronics and Telecommunication **Sem.:- IV**
Subject:- Electrical Machines and Instruments (BTESC401) **Marks: 60**
Date:- 26/11/19 **Time:- 3 Hr.**

Instructions to the Students

1. Each question carries 12 marks.
2. Attempt **any five** questions of the following.
3. Illustrate your answers with neat sketches, diagram etc., wherever necessary.
4. If some part or parameter is noticed to be missing, you may appropriately assume it and should mention it clearly

			Marks
Q.1			
	a)	Derive the e.m.f. equation of the d.c. machine. State clearly the meaning and units of the symbols used.	6
	b)	A 220 V dc shunt machine has an armature resistance of 0.5 ohm. If the full load armature current is 20A, find the induced emf when the machine acts as: 1. Generator 2. Motor	6
Q.2			
	a)	What are the different methods of speed control of 3-phase induction motor?	6
	b)	Explain the construction of synchronous generator.	6
Q.3			
	a)	Explain the working principle of permanent magnet stepper motor.	6
	b)	Explain the operation of a 2-phase variable reluctance motor.	6
Q.4			
	a)	Explain the principle, working and construction of LVDT. What is meant by residual voltage?	6
	b)	A platinum thermometer has a resistance of 100Ω at 25c. Find its resistance at 65c if the platinum has a resistance temperature coefficient of 0.00392/C.	6
Q.5			
	a)	Explain different methods for measurement of thickness.	6
	b)	Write a short note on: Digital tachometer.	6
Q.6			
	a)	Give classification of recorders.	6
	b)	Explain with neat diagram galvanometer type strip chart recorder.	6

Paper End