SNS COLLEGE OF ENGINEERING

Kurumbapalayam (Po), Coimbatore – 641 107

AN AUTONOMOUS INSTITUTION

Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai

IV Semester

B.E-Mechanical Engineering

19EE407 – Electrical Machines and Drives

Regulations 2019

QUESTION BANK FOR IAE 2

	PART A
1	The stepper motor has a step angle of 1.8º and is driven at 4000rps. Determine (a) Resolution (ii) Rotor speed.
2	List the properties of reluctance motor.
3	Discuss the applications of micro stepping VR stepper.
4	Compare Reluctance motor and Induction motor.
5	Name the protective devices used in DC Motor Starter.
6	List the function of starter in DC Motor.
7	Define plugging.
8	Which method is preferred for controlling the speed of DC shunt motor above the rated speed? Justify.
9	State the advantages of DOL Starter.
10	Write the difference between three point and four point starter,
11	List the function of OLR Coil.
12	Mention the disadvantages of three point starter.
13	Compare mechanical braking and electrical braking.
	PART B
1	A Steeper motor has a step angle of 2.5˚, determine a) Resolution b) Number of steps per shaft to make 25 revolution c) Shaft speed if starting stepping frequency is 3600 pulse/sec.
2	Discuss in detail about the construction and working of Reluctance motor with neat diagram.
3	Elaborate the construction and working of variable reluctance stepper motor with a neat sketch.
4	Discuss the construction and operation of AC servo motor. Also write its application,
5	Describe briefly the various methods of controlling the speed of a DC Shunt Motor and bring out their merits and demerits. Also, state the situations where each method is suitable. **(Speed Control of DC Motor by Armature and Field Control)**
6	With neat sketch explain three point starter to start the DC Shunt Motor. Also list its limitation.
7	With neat diagram explain the working of any two types of starters used for three phase squirrel cage induction motor.
8	(i) A three phase squirrel cage induction motor has a starting current eight times the full load value. The full load slip is 4%. Compute. (a) Direct On-Line Starter (b) Star / Delta Starter. (ii) Differentiate between Dynamic braking and Regenerative braking of DC Shunt motor with necessary diagrams.
9	Illustrate the construction and operation of four point starter with neat schematic diagram.
10	A 220 V shunt motor has an armature resistance of 0.062 Ω and with full fields has an EMF of 215 V at a speed of 960 rpm, the motor is driving an overhauling load with a torque of 172 N-m. Calculate the minimum speed at which the motor can hold the load by means of

	regenerative braking.
11	What is meant by Braking of Electric Motor? Explain the following types of Electrical Braking for three phase induction motor (i) Regenerative Braking (ii) Dynamic or Rheostat Braking (iii) Plugging or Reverse Braking.
12	A three phase induction motor has a ratio of maximum torque to full load torque as 2.5:1. Determine the ratio of starting torque to full load torque if star-delta starter is used. The rotor resistance and standstill reactance per phase are 0.4 Ω and 4 Ω respectively.