GOVT. POLYTECHNIC KORAPUT
DEPARTMENT OF ELECTRICAL ENGG.

Discipline: Electrical Engg.	Semester: 5th	Name of the Teaching Faculty: Sandhya Kumari Randhi	
Subject: EC-II	No. of Days/per week class allotted: 4	Semester From Date: No. of Weeks:15	To Date:
Week	Class Day	Theory/Practical Topics	
1st	01	Production of rotating magnetic field	
	02	Constructional feature of squirrel cage and slip ring induction motor	
	03	Principles of operation of 3-phase induction motor	
	04	Slip speed, slip, and relation with rotor quantities	
2nd	01	Stating torque, Running torque condition for maximum torque	
	02	Numerical problems	
	03	Torque slip characteristics, relation between full load torque and starting torque	
	04	Numerical problems	
3rd	01	Relations between rotor copper loss , rotor output, and gross torque and relation of slip with rotor copper loss	
	02	Explain and state methods of starting and different type of starters	
	03	Explain speed control by voltage control, rotor resistance control, pole changing, frequency control techniques	
	04	Plugging of three phase induction motors	
4th	01	Different types of motor enclosures.	
	02	Principle of induction generator and its application	
	03	Types of alternators and their applications	
	04	Working principle of alternator and relation between speed and frequency.	
5th	01	Armature winding and derivation of expression for winding facrors.	
	02	Harmonics its causes and its impact on winding factor.	
	03	EMF equation of alternator.	
	04	Numerical problems	
6th	01	Armature reaction and its effect on EMF at different power factor of load.	
	02	Vector diagram of loaded alternator.	
	03	Numerical problems	
	04	Testing of alternator (open circuit test and short circuit test).	
7th	01	Numerical problems	
	02	Determination of voltage regulation by direct loading and synchronous impedance method.	
	03	Parallel operation of alternator using synchroscope, dark and bright lamp method.	
	04	Distribution of load by parallel connected alternators.	
8th	01	Constructional features of synchronous motor. Principle of operation and concept of load angle.	

		02	Effect of varying load with constant excitation and effect of varying excitation with constant load.
		03	Derivation of torque and power developed.
		04	Power angle characteristics of cylindrical rotor motor.
9th		01	Effect of excitation on armature current and power factor.
		02	Haunting and function damper bars.
		03	Method of starting synchronous motor.
		04	Application of synchronous motor.
		05	Tutorial class
10th		01	Rotating field theory of single phase induction motor.
		02	Feraris principle.
		03	Split phase motor.
		04	Capacitor start motor.
11th		01	Capacitor start, capacitor run motor.
		02	Permanent capacitor type motor.
		03	Shaded pole motor.
		04	Method to change the direction of rotation of above motors.
12th		01	Construction and working principle of single phase series motor.
		02	Running characteristic and application of single phase series motor.
		03	Construction, working principle and application of universal motor.
		04	Repulsion start motor.
13th		01	Repulsion start induction motor.
		02	Repulsion induction motor.
		03	Principle and classification of stepper motor.
		04	Principle of variable reluctance stepper motor.
14th		01	Principle of permanent magnet stepper motor.
		02	Principle of hybrid stepper motor.
		03	Applications of stepper motor.
		04	Grouping of winding
15th		01	Advantages of grouping.
		02	Parallel operation of three phase transformer.
		03	Tap changer (on/off load tap changing)
		04	Maintenance transformers.

Signature of concerned faculty

H.O.D Electr