


# MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE



## DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING



B. Tech II Year I Semester – R 20


Induction and Transformers Laboratory – 20EEE206



### LIST OF EXPERIMENTS

SI NO	Name of the Experiments	Equipment details	Image
1	Equivalent circuit of single-phase induction motor	Single-phase induction motor. MI ammeter, MI Voltmeter, Wattmeter (LPF & UPF) with loading arrangements	



2	Load test on single-phase induction motor	Single-phase induction motor. MI Ammeter, MI Voltmeter, Wattmeter (LPF & UPF) with loading arrangements	 <p>1-Phase INDUCTION MOTOR</p> <ul style="list-style-type: none"> <li>1. Power - 1.5 kW / 2.0 hp</li> <li>2. Rated Voltage - 140 / 240 V</li> <li>3. Rated Current - 12.5 A</li> <li>4. Rated Speed - 1425 rpm</li> </ul>
3	No load and Blocked rotor test on 3 phase squirrel cage induction motor	Three-phase induction motor. MI Ammeter, MI Voltmeter, Wattmeter (LPF & UPF) with loading arrangements	 <p>3-Phase SQUIRREL CAGE INDUCTION MOTOR</p> <ul style="list-style-type: none"> <li>1. Power - 3.75 kW</li> <li>2. Rated Voltage - 415 V</li> <li>3. Rated Current - 7.5 A</li> <li>4. Rated Speed - 1425 rpm</li> </ul> <p>1 AMP LOAD - 250V</p>


4	Load test on 3 phase squirrel cage induction motor	Three-phase induction motor. MI Ammeter, MI Voltmeter, Wattmeter (LPF & UPF) with loading arrangements	
5	Load test on Slip ring induction motor	Three-phase induction motor. MI Ammeter, MI Voltmeter, Wattmeter (LPF & UPF) with loading arrangements	

6	Speed Control on three phase induction motor	Three-phase induction motor. MI Ammeter, MI Voltmeter, V/F Control Panels.																													
7	Regulation of three phase alternator by EMF and MMF methods	Alternator set, Rheostat, MI Ammeter, MI Voltmeter, and Wattmeter (LPF & UPF)	 <table border="1" data-bbox="1406 1145 1832 1289"> <thead> <tr> <th colspan="2">ALTERNATOR</th> <th colspan="2">MOTOR</th> </tr> </thead> <tbody> <tr> <td>1. Power</td> <td>- 3.5 kW</td> <td>1. Power</td> <td>- 3.7 kW</td> </tr> <tr> <td>2. Rated Voltage</td> <td>- 415 V</td> <td>2. Rated Voltage</td> <td>- 220 V</td> </tr> <tr> <td>3. Rated Current</td> <td>- 5.0 A</td> <td>3. Rated Current</td> <td>- 19.5 A</td> </tr> <tr> <td>4. Rated Speed</td> <td>- 1500 RPM</td> <td>4. Rated Speed</td> <td>- 1500 RPM</td> </tr> <tr> <td>5. Excitation</td> <td>- 180 V</td> <td>5. Excitation</td> <td>- 220 V</td> </tr> <tr> <td></td> <td>19 A</td> <td></td> <td>0.75 A</td> </tr> </tbody> </table>	ALTERNATOR		MOTOR		1. Power	- 3.5 kW	1. Power	- 3.7 kW	2. Rated Voltage	- 415 V	2. Rated Voltage	- 220 V	3. Rated Current	- 5.0 A	3. Rated Current	- 19.5 A	4. Rated Speed	- 1500 RPM	4. Rated Speed	- 1500 RPM	5. Excitation	- 180 V	5. Excitation	- 220 V		19 A		0.75 A
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8	Synchronization of three phase alternator with infinite bus bar	Alternator set, Rheostat , MI Ammeter, MI Voltmeter, and Synchronizing Panel	
9	V and inverted V-curves of synchronous motor	Alternator set, Rheostat, MI Ammeter, MI Voltmeter, Wattmeters, and Synchronizing Panel (Lamp Method).	



<p>10</p>	<p>Determination of <math>X_d</math> and <math>X_q</math> of a salient pole synchronous machine / slip test salient pole synchronous machine.</p>	<p>Alternator set, Rheostat, MI Ammeter, MI Voltmeter, and Wattmeters.</p>	 <table border="1" data-bbox="1429 555 1883 667"> <thead> <tr> <th colspan="2">ALTERNATOR</th> <th colspan="2">MOTOR</th> </tr> </thead> <tbody> <tr> <td>1. Power</td> <td>- 5.5 kW</td> <td>1. Power</td> <td>- 5.0 hp</td> </tr> <tr> <td>2. Rated Voltage</td> <td>- 415 V</td> <td>2. Rated Voltage</td> <td>- 230 V</td> </tr> <tr> <td>3. Rated Current</td> <td>- 5.0 A</td> <td>3. Rated Current</td> <td>- 19.5 A</td> </tr> <tr> <td>4. Rated Speed</td> <td>- 1500 rpm</td> <td>4. Rated Speed</td> <td>- 1500 rpm</td> </tr> <tr> <td>5. Type</td> <td>- Salient</td> <td>5. Excitation</td> <td>- 220 V</td> </tr> </tbody> </table>	ALTERNATOR		MOTOR		1. Power	- 5.5 kW	1. Power	- 5.0 hp	2. Rated Voltage	- 415 V	2. Rated Voltage	- 230 V	3. Rated Current	- 5.0 A	3. Rated Current	- 19.5 A	4. Rated Speed	- 1500 rpm	4. Rated Speed	- 1500 rpm	5. Type	- Salient	5. Excitation	- 220 V
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<p>11</p>	<p>Efficiency of a three-phase alternator.</p>	<p>Alternator set, Rheostat, MI Ammeter, MI Voltmeter, Wattmeters and resistive Load</p>																									

12	Parallel operation of three phase alternators.	Alternator set, Rheostat, MI Ammeter, MI Voltmeter, Wattmeters, and Synchronizing Panel (Synchroscope Method).	
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