



MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE




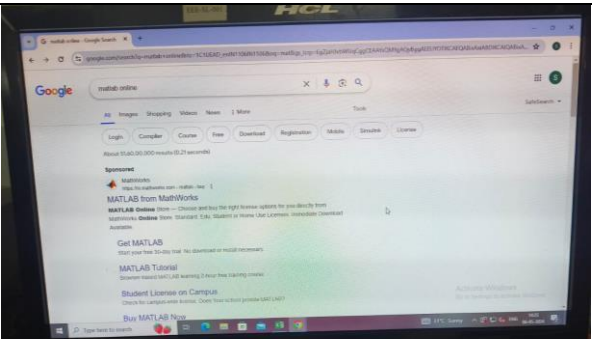
DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

B. Tech III Year II Semester – R 20

Power System II – 20EEE211

LIST OF EXPERIMENTS

SI NO	NAME OF THE EXPERIMENTS	Equipment details	Image																								
1	Determination of Sequence Impedances of a Cylindrical Rotor Synchronous Machine	Synchronous Machine, Ammeter, Voltmeter, Wattmeter, Rheostat	 <table border="1"><thead><tr><th colspan="2">ALTERNATOR</th><th colspan="2">MOTOR</th></tr></thead><tbody><tr><td>1. Power</td><td>- 5.5 kVA</td><td>1. Power</td><td>- 5.7 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 19 A</td><td>5. Excitation</td><td>- 220 V 0.75 A</td></tr></tbody></table>	ALTERNATOR		MOTOR		1. Power	- 5.5 kVA	1. Power	- 5.7 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 19 A	5. Excitation	- 220 V 0.75 A
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2	Fault Analysis-I (i). LG Fault (ii).LL Fault	Synchronous Machine Voltmeter, Ammeter, Rheostat, Single phase resistive load, tachometer	 <table border="1"><thead><tr><th colspan="2">ALTERNATOR</th><th colspan="2">MOTOR</th></tr></thead><tbody><tr><td>1. Power</td><td>- 5.5 kVA</td><td>1. Power</td><td>- 5.7 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 19 A</td><td>5. Excitation</td><td>- 220 V 0.75 A</td></tr></tbody></table>	ALTERNATOR		MOTOR		1. Power	- 5.5 kVA	1. Power	- 5.7 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 19 A	5. Excitation	- 220 V 0.75 A
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3	Fault Analysis-II (i). LLG Fault (ii).LLL Fault	Synchronous Machine, Voltmeter, Ammeter, Rheostat, Three phase resistive load, tachometer	 <p>A photograph of a laboratory setup. It consists of a DC shunt motor connected to a three-phase alternator. The entire setup is mounted on a white base with a blue label that reads 'DC SHUNT MOTOR-3Ø ALTERNATOR SET'. The label lists specifications for both the alternator and the motor.</p> <table border="1"> <thead> <tr> <th colspan="2">ALTERNATOR</th> <th colspan="2">MOTOR</th> </tr> </thead> <tbody> <tr> <td>1. Power</td> <td>- 3.5 kVA</td> <td>1. Power</td> <td>- 5.7 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>- 0.78 A</td> </tr> </tbody> </table>	ALTERNATOR		MOTOR		1. Power	- 3.5 kVA	1. Power	- 5.7 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		- 0.78 A
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4	Capability curve of a Synchronous Generator	Synchronous Generator Voltmeter, Ammeter, Rheostat, Single phase resistive load, tachometer	 <p>A photograph of a laboratory setup, identical to the one in the first row. It shows a DC shunt motor driving a three-phase alternator on a white base with a blue label. The label lists specifications for both the alternator and the motor.</p> <table border="1"> <thead> <tr> <th colspan="2">ALTERNATOR</th> <th colspan="2">MOTOR</th> </tr> </thead> <tbody> <tr> <td>1. Power</td> <td>- 3.5 kVA</td> <td>1. Power</td> <td>- 5.7 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>- 0.78 A</td> </tr> </tbody> </table>	ALTERNATOR		MOTOR		1. Power	- 3.5 kVA	1. Power	- 5.7 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		- 0.78 A
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5	Power Angle Characteristics of a Salient Pole Synchronous Machine	Synchronous Machine, Voltmeter, Ammeter, Rheostat, three phase auto transformer, tachometer	 <p>A photograph of a laboratory setup, identical to the previous rows. It shows a DC shunt motor driving a three-phase alternator on a white base with a blue label. The label lists specifications for both the alternator and the motor.</p> <table border="1"> <thead> <tr> <th colspan="2">ALTERNATOR</th> <th colspan="2">MOTOR</th> </tr> </thead> <tbody> <tr> <td>1. Power</td> <td>- 3.5 kVA</td> <td>1. Power</td> <td>- 5.7 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>- 0.78 A</td> </tr> </tbody> </table>	ALTERNATOR		MOTOR		1. Power	- 3.5 kVA	1. Power	- 5.7 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		- 0.78 A
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6	Gauss Seidel load flow analysis using MATLAB Software	MATLAB Software, MATLAB 2018A	 <p>A screenshot of a web browser showing the MATLAB Online interface. The browser address bar shows 'matlab-online'. The page displays the MATLAB logo and navigation options like 'Login', 'Computer', 'Course', 'Free', 'Download', 'Registration', 'Make', 'Structure', and 'Learn'. Below the navigation bar, there are sections for 'Sponsors', 'Get MATLAB', 'MATLAB Tutorial', and 'Buy MATLAB Now'.</p>																												
7	Newton Raphson method of load flow analysis using MATLAB Software	MATLAB Software, MATLAB 2018A																													
8	Formation of Y bus matrix by inspection / analytical method using MATLAB Software	MATLAB Software, MATLAB 2018A																													

9	Formation of Z bus using building algorithm using MATLAB Software	MATLAB Software, MATLAB 2018A
10	Fast decoupled load flow analysis using MATLAB Software	MATLAB Software, MATLAB 2018A
11	Step Response of Two Area System with Integral Control and Estimation of Tie Line Power Deviation using MATLAB/SIMULINK	MATLAB Software, MATLAB 2018A
12	Step Response of Two Area System with Integral Control and Estimation of Tie Line Frequency Deviation using MATLAB /SIMULINK	MATLAB Software, MATLAB 2018A
13	Transient Stability Analysis	MATLAB Software, MATLAB 2018A

