<table>
<tr><td>1</td><td>Name of Course</td><td>C. C. IN ELEMENTS OF ELECTRICAL ENGINEERING</td></tr>
<tr><td>2</td><td>Course Code</td><td>302132</td></tr>
<tr><td>3</td><td>Max. Nos. of</td><td>25 Students</td></tr>
<tr><td>4</td><td>Duration</td><td>6 Months</td></tr>
<tr><td>5</td><td>Type</td><td>Part Time</td></tr>
<tr><td>6</td><td>Nos. of Days /</td><td>6 Days</td></tr>
<tr><td>7</td><td>Nos. of Hours</td><td>4 Hrs</td></tr>
<tr><td>8</td><td>Space Required</td><td>Laboratory = 500 Sq feet
Class Room = 200 Sq feet
TOTAL = 700 Sq feet</td></tr>
<tr><td>9</td><td>Entry</td><td>VIIth Passed</td></tr>
<tr><td>10</td><td>Objective Of Syllabus/ introduction</td><td>1.Knowledge of electrical
2.Types of electrical house wiring
3.Types of electrical appliances</td></tr>
<tr><td>11</td><td>Employment Opportunity</td><td>The trainee will either to be able to take up jobs with agencies which maintain and repair such equipments or with working experience will be in a position to start his own independent Business.</td></tr>
<tr><td>12</td><td>Teacher’s Qualification</td><td>Diploma in Electrical Engineering.</td></tr>
<tr><td>13</td><td>Training System</td><td>Training System Per Week
<table>
<tr><th>Theory</th><th>Practical</th><th>Total</th></tr>
<tr><td>6 Hours</td><td>18 Hours</td><td>24 Hours</td></tr>
</table></td></tr>
<tr><td>14</td><td>Exam. System</td><td>
<table>
<tr><th>Sr. No.</th><th>Paper Code</th><th>Name of Subject</th><th>TH/PR</th><th>Hours</th><th>Max. Marks</th><th>Min. Marks</th></tr>
<tr><td>1</td><td>30213211</td><td>Elements of Electrical Engineering</td><td>TH-I</td><td>3 hrs.</td><td>100</td><td>35</td></tr>
<tr><td>2</td><td>30213221</td><td>Elements of Electrical Engineering</td><td>PR-I</td><td>6 hrs.</td><td>200</td><td>100</td></tr>
<tr><td>3</td><td>30213222</td><td>Wiring Practical</td><td>PR-II</td><td>3 hrs.</td><td>100</td><td>50</td></tr>
<tr><td></td><td></td><td>TOTAL</td><td></td><td></td><td>400</td><td>185</td></tr>
</table></td></tr>
</table>

SYLLABUS

Theory Paper – I Elements of Electrical Engineering

Chapter	Contents
Current Electricity	Static Electricity, positive and negative charge, electric current, voltage and resistance, ampere, volt,
Safety and First Aid	Electric shock, its preventation, methods of artificial resuscitation
Common Tools and symbols	Cutting tool, Holding tools, Threading tools, Measuring tools, electrical symbols
Conductors, insulators and wires	Definations, properties, examples and uses. Type of joints.
Wiring Accessories	Switches, Holders, Ceiling rose, main switches, Fuses
Electrical Circuit	Ohm's law, series circuit, parallel circuit, series –parallel circuit ,open circuit, short circuit,
Magnetism	Defination-magnetic pole, magnetic field, magnetic circuit, magnetic flux, flux density, property of magnet, method of making magnet,
Cell	Primary cell, Types. Different terms , Secondry cell-Types i.e. Lead acid cell, Nickle iron cell
Capacitor	Defination ,Types of capacitor, capacitor in series and parallel ,Uses.
Fuse	Defination , Working, Types of fuses, Terms-Current capacity of fuse wires.
Measuring Instrument	Classification of instruments, Forces required for instruments, Types i.e. moving coil, moving iron, hot wire, Energy meter.
Generator	Defination ,working principle, parts, types, uses.
DC Motor	Defination ,working principle, parts, types, uses.
AC circuit	A .C . , related Terms – frequency , R .M .S . etc. Types of A .C . circuits , Power factor , relation between kW , kVA , kVAR
Alternator	Working , parts , E.M. F . equation , types ,
Transformer	Working principal , construction ,types , transformer ratio (Turns , Voltage , Current) E .M .F . equation , Efficiency , cooling methods . Auto transformer .
AC Motors(single phase)	Working principle , types & uses i.e. split phase , capacitor , shaded pole , universal motor .
AC Motors(Three phase)	All types of A .C . motors , induction motor working , types of induction motor , , principal of 3 phase induction motor & main parts , synchronous speed , slip .
Starter	Functions , types , sketches ,

Practical Paper – I
Elements of Electrical Engineering

List of Practical

1. Techniques of separating person in connect with live wire,
2. Artificial respiration and shock treatment.
3. First aid treatment
4. Identification of common tools and Adjustment of common tools.
5. Practice of wire joints.
6. Identification of wiring materials.
7. Verification of ohm's law
8. Connection and finding equivalent resistance of series circuit.
9. Connection and finding equivalent resistance of parallel circuit.
10. Connection and total capacitance in series and parallel of capacitors.
11. Verification of magnetic field of solenoid with a) Air cored b) Iron cored
12. 12.Measurement of resistance by voltmeter and ammeter.
13. 13.Controlling lamp in series.
14. 14.Controlling lamps in parallel
15. Testing of lead acid battery and filling of electrolyte in battery.
16. Connection and verification or e.m.f. for series and parallel connection of cell.
17. Testing of capacitor.
18. Connection of voltmeter.
19. Connection of ammeter.
20. Connection of voltmeter and ammeter in the circuit.
21. Connection of Energy meter.
22. Calibration of voltmeter.
23. Calibration of Ammeter.
24. Study the parts of Generator.
25. Identify the terminal of DC series motor.
26. Identify the terminal of DC shunt motor.
27. Identify the terminal of Dc compound motor.

Practical Paper – II

Wiring Practical

List of Practical

1. R-L in series.
2. R-C in series.
3. R-L-C in series.
4. Verify the voltage ratio of transformer.
5. Verify the current ratio of transformer.
6. Connection of transformer in the circuit.
7. Start run reverse of split phase motor.
8. Start run reverse of perment capacitor motor
9. To start run reverse capacitor start induction motor.
10. Connection of three phase motor ,main switch and starter .
11. Connection of D.O.L. starter with three phase motor.
12. To change the D.O.R. of three phase motor.

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