

## RJA Panel

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Md. Aftab Uddin, Electrician  
Shamsuddin Miah Associate Ltd

Md. Sazal, Electrician  
Unique Design Developer

Md. Shorif, Electrician  
Green Ball Developer

Md. Abu Baker, Electrician  
Self-Employed, IBN Electric &  
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Firoz Hossin, Electrician  
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Md. Liton Shaikh, Electrician  
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## RJA Facilitator

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# Rapid Job Analysis of House Wiring Electrician



**23 September 2014**

**Skills and Employment Programme-Bangladesh (SEP-B)**



Results For The Real World

## Duties and Tasks

### A. Practice Occupational Health and Safety (OHS) Procedure:

<b>A1.</b> Administer safety of the workers	<b>A2.</b> Administer safety of the workplace	<b>A3.</b> Follow safety signs and regulations	<b>A4.</b> Apply personal protective equipment	<b>A5.</b> Arrange pure drinking water and sanitation facilities	<b>A6.</b> Control housekeeping hazards
<b>A7.</b> Apply first aids on minor injuries	<b>A8.</b> Respond to emergencies and personal wellbeing	<b>A9.</b> Control electric fire hazards	<b>A10.</b> Prevent electrical shocks		

### B. Illustrate Electrical House Wiring Work:

<b>B1.</b> Identify symbols of electrical fittings	<b>B2.</b> Draw freehand sketches for Electrical House Wiring Symbols	<b>B3.</b> Draw free hand sketches for electrical circuits	<b>B4.</b> Interpret drawings and specifications	<b>B5.</b> Estimate required materials for Electrical House Wiring work	<b>B6.</b> Estimate required labor and wages for the work
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### C. Perform Basic Electrical Works:

<b>C1.</b> Identify different sizes and capacity of wires and cables	<b>C2.</b> Identify different fittings used in electrical works	<b>C3.</b> Make T-Wire joint	<b>C4.</b> Make Straight wire joints	<b>C5.</b> Insulate wire joints with insulation tape	<b>C6.</b> Solder wire joints
<b>C7.</b> Make Pigtail-Wire joint	<b>C8.</b> Perform series circuit connection	<b>C9.</b> Perform parallel circuit connection	<b>C10.</b> Measure Current	<b>C11.</b> Measure Voltage	<b>C12.</b> Connect cable lugs with wires and cables
<b>C13.</b> Apply different tools and equipment for electrical works					

### D. Install Electrical Wiring Circuits and Fittings

<b>D1.</b> Identify wiring types	<b>D2.</b> Make layout for concealed wiring	<b>D3.</b> Lay PVC pipe/conduit for concealed wiring	<b>D4.</b> Install junction box for load/power sockets	<b>D5.</b> Mark Electrical Points in the Building	<b>D6.</b> Cut grooves on the wall for conduits
<b>D7.</b> Install conduit through wall grooves	<b>D8.</b> Lay cable in conduits for concealed wiring	<b>D9.</b> Install PVC conduit for surface wiring	<b>D10.</b> Lay cable through conduits for surface wiring	<b>D11.</b> Lay PVC casing and capping for surface wiring	<b>D12.</b> Install sub distribution board (SDB)
<b>D13.</b> Install main distribution board (MDB)	<b>D14.</b> Connect main distribution board (MDB) to sub distribution board (SDB)	<b>D15.</b> Connect different types of cut-outs	<b>D16.</b> Install miniature circuit breaker (MCB)	<b>D17.</b> Install Moulded Case Circuit Breaker (MCCB)	<b>D18.</b> Install Earth Leakage Circuit Breaker
<b>D19.</b> Install change-over switch	<b>D20.</b> Install one-way circuit	<b>D21.</b> Install two-way circuit	<b>D22.</b> Install calling bell	<b>D23.</b> Install 2-pin power circuit (sockets)	<b>D24.</b> Install 3-pin power circuits(sockets)
<b>D25.</b> Install demur switch / fan regulator	<b>D26.</b> Install service wiring from single phase energy meter to main switch	<b>D27.</b> Install service wiring from three phase energy meter to MDB	<b>D28.</b> Install sub-meter connection	<b>D29.</b> Fix wall mounting lamp	<b>D30.</b> Install fluorescent lamp circuit

<b>D31.</b> Install ceiling fan	<b>D32.</b> Install wall mounted fan	<b>D33.</b> Install exhaust fan	<b>D34.</b> Install earthing system	<b>D35.</b> Install lighting arrester	<b>D36.</b> Install Instant Power Supply (IPS) system
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**E. Perform Electrical Tests:**

<b>E1.</b> Perform sort circuit test	<b>E2.</b> Perform open circuit test	<b>E3.</b> Perform earth leakage test	<b>E4.</b> Conduct continuity test for conductor		
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**F. Repair and Maintain Electrical Tools and Equipment:**

<b>F1.</b> Fill up the requisition form	<b>F2.</b> Perform generic preventive maintenance of electrical tools and equipment	<b>F3.</b> Notify supervisor in case of broken tools and equipment	<b>F4.</b> Maintain inventory for electrical tools and equipment	<b>F5.</b> Service ceiling fan	<b>F6.</b> Service exhaust fan
<b>F7.</b> Service wall mounted fan	<b>F8.</b> Repair and service fluorescent lamp	<b>F9.</b> Repair electrical wiring of the building	<b>F10.</b> Service single phase pump motor	<b>F11.</b> Repair SDB and MDB	<b>F12.</b> Clean tools, equipment and work area after works

**G. Perform Communication:**

<b>G1.</b> Communicate with supervisor /workers	<b>G2.</b> Assist supervisor to prepare work schedule	<b>G3.</b> Receive instruction from supervisor for day to day works	<b>G4.</b> Provide instruction to apply safety measures	<b>G5.</b> Provide instruction for cleaning the workplace	<b>G6.</b> Communicate over telephone
<b>G7.</b> Keep the attendance records of the workers					

**H. Develop Professionalism:**

<b>H1.</b> Take advice from supervisor	<b>H2.</b> Participate in trainings	<b>H3.</b> Attend meetings	<b>H4.</b> Work with the specialized skilled worker	<b>H5.</b> Visit new sites	<b>H6.</b> Explore new opportunities of learning
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## Additional Information

<u>Worker Traits</u>		<u>Entry Requirements</u>	<u>Career Paths</u>
<ul style="list-style-type: none"> <li>• Punctual</li> <li>• Physically / Mentally healthy</li> <li>• Physical fitness</li> <li>• Male / Female</li> <li>• Honesty</li> <li>• Good attitude</li> <li>• Eagerness</li> </ul>	<ul style="list-style-type: none"> <li>• Commitment</li> <li>• Communication Skill</li> <li>• Patience</li> <li>• Disciplined</li> <li>• Attentive</li> <li>• Good conduct</li> </ul>	<ul style="list-style-type: none"> <li>• Male / Female</li> <li>• Grade 5 and above</li> <li>• Ability to read and write</li> </ul> <p><b><u>Duration of Training</u></b> 3-4 months 03 hrs/day</p>	<p>Contactor/Supervisor Senior Electrician</p> <p><b><u>Future Trend</u></b> This sector is growing rapidly Employment demand is increasing</p>

<u>Tools and Equipment</u>		<u>Personal Protective Equipment</u>
<ol style="list-style-type: none"> <li>1. Ceiling Fan</li> <li>2. Single Phase Induction Motor (Water Pump)</li> <li>3. IPS system</li> <li>4. Tools/parts box</li> <li>5. Cable Cutter</li> <li>6. Electric Drill machine</li> <li>7. Soldering Iron</li> <li>8. Adjustable spanners/Wrench</li> <li>9. Wire Stripper</li> <li>10. Bolt cutters</li> <li>11. Chisels: (a)Wood, (b) Cold</li> <li>12. Crosscut saw</li> <li>13. Drill bits</li> <li>14. Gauges</li> <li>15. Grin let</li> <li>16. Hacksaw and blade</li> <li>17. Hand drill</li> <li>18. Hand saws</li> <li>19. Phase and neon tester</li> <li>20. Electrical Knife</li> </ol>	<ol style="list-style-type: none"> <li>21. Series lamp</li> <li>22. Lug punch machine</li> <li>23. LN Key Set</li> <li>24. Measuring Tapes</li> <li>25. Pliers: (a)Combination Pliers, (b)Side cutting Pliers, (c)Diagonal cutting Pliers, (d)Nose Pliers, (e) Long nose Pliers</li> <li>26. Punches</li> <li>27. Screwdrivers:(a)Star, (b) Flat, (c) Connecting</li> <li>28. Files: (a) Flat, (b)Round,(c) Half round</li> <li>29. Hammers: (a) Ball pin, (b) Claw</li> <li>30. Shovel/Spades</li> <li>31. Sockets</li> <li>32. Tester</li> <li>33. Wire Cutters</li> <li>34. Rod bender</li> <li>35. Trowel/Kunni</li> <li>36. Tape and Dai</li> </ol>	<ol style="list-style-type: none"> <li>1. Dust mask</li> <li>2. Eye Goggles</li> <li>3. Hand Gloves</li> <li>4. Safety shoes</li> <li>5. Aprons</li> <li>6. Helmet</li> <li>7. Safety belt</li> </ol> <p><b><u>Measuring devices</u></b></p> <ol style="list-style-type: none"> <li>1. Steel tape measure</li> <li>2. S.W.G.</li> <li>3. Steel rule</li> <li>4. Megger</li> <li>5. Calculator</li> <li>6. Level Indicator</li> <li>7. Multi Meter/AVO Meter</li> <li>8. Earth Tester</li> <li>9. Clip on Meter</li> </ol>

<u>Related Knowledge</u>		
<ol style="list-style-type: none"> <li>1. Name of safety equipment and its uses</li> <li>2. Types of different wiring</li> <li>3. Types of electrical drawing and design</li> <li>4. Use of electrical tools and equipment</li> <li>5. Name of the materials</li> <li>6. Read, write and numeracy knowledge (simple math)</li> <li>7. Daily labor cost</li> <li>8. Rules of electrical safety</li> <li>9. Definition of electricity</li> <li>10. Cable capacity and rating</li> <li>11. Circuit breaker rating</li> </ol>	<ol style="list-style-type: none"> <li>12. Color code of cables</li> <li>13. Series and parallel circuit</li> <li>14. Use of measuring equipment</li> <li>15. Measuring units</li> <li>16. Functions of multi-meter</li> <li>17. Introduction to different symbols</li> <li>18. Use of different fittings</li> <li>19. Types of pointing</li> <li>20. Safety measures</li> <li>21. Possible causes of accidents</li> <li>22. Safety regulation of government</li> <li>23. Significance the first aid</li> <li>24. Types of wiring</li> </ol>	<ol style="list-style-type: none"> <li>25. Types of cable</li> <li>26. MDB, SDB specifications</li> <li>27. Types of circuit breakers</li> <li>28. Connections of different circuits</li> <li>29. Two-way connections</li> <li>30. Electrical load calculation</li> <li>31. Concept of power circuit and light circuits</li> <li>32. Change over switch</li> <li>33. Rating of fuse and wire</li> <li>34. Electrical faults</li> <li>35. Concept of Earthing</li> <li>36. Types of electrical tests</li> </ol>