# Ace Assessments

## Qn Bank : PSS/Q 0107  Consumer Energy Meter Technician

### PSS N 0114 (Manually Remove, Change and Install Low Voltage, Single & Three Phase Energy Meters)

<table>
<thead>
<tr>
<th>S No</th>
<th>Performance Criteria (PC)</th>
<th>Question</th>
<th>Option- A</th>
<th>Option- B</th>
<th>Option- C</th>
<th>Option- D</th>
<th>Complexity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PC20</td>
<td>What are the Duties and Responsibilities of Consumer Energy Meter Technician working in a Power Distribution Company?</td>
<td>He shall be responsible for upkeep of T&amp;P and safety appliances supplied to him and keep them in working order</td>
<td>He is responsible to install new energy meter, make connections, test and sealing of energy meter at consumer premises.</td>
<td>He shall maintain diaries showing the day to day work done and get the signatures of his superiors once in a fortnight</td>
<td>All of these</td>
<td>Easy</td>
</tr>
<tr>
<td>2</td>
<td>PC1</td>
<td>Energy Meter installation and connections are being carried out By ?</td>
<td>Meter Technician</td>
<td>Technical Helper</td>
<td>Supervisor or Junior Engineer</td>
<td>JE or Executive Engr</td>
<td>Easy</td>
</tr>
<tr>
<td></td>
<td>PC9</td>
<td>Single Phase Energy meters of rating 10-60 A are installed for load up to</td>
<td>5 kW</td>
<td>10 kW</td>
<td>15 kW</td>
<td>20 kW</td>
<td>Easy</td>
</tr>
<tr>
<td>3</td>
<td>PC9</td>
<td>Three Phase Energy meters (Whole current or Polyphase) of rating 20-100 A when connected with 4X 25 sq. mm aluminium cable could sustain for load up to</td>
<td>40 kW</td>
<td>60 kW</td>
<td>80 kW</td>
<td>100 kW</td>
<td>Medium</td>
</tr>
<tr>
<td>4</td>
<td>PC9</td>
<td>Three Phase LT CT Energy meters having CT's of 200/5A are sanctioned for consumer having load of</td>
<td>50 kW</td>
<td>50 to 100 kW</td>
<td>100 to 150 kW</td>
<td>150 to 200 kW</td>
<td>Medium</td>
</tr>
<tr>
<td>No.</td>
<td>PC Code</td>
<td>Question</td>
<td>Option 1</td>
<td>Option 2</td>
<td>Option 3</td>
<td>Option 4</td>
<td>Difficulty</td>
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<tr>
<td>5</td>
<td>PC20</td>
<td>Periodical Inspection, Testing &amp; Calibration of the energy meters as specified in the present regulations are?</td>
<td>For Bulk Supply Meters (HT) - 1 Year LT Meters - 5 years</td>
<td>For Bulk Supply Meters (HT) - 2 Years LT Meters - 5 Years</td>
<td>For Bulk Supply Meters (HT) - 2 Years LT Meters - 7 Years</td>
<td>For Bulk Supply Meters (HT) - 5 Years LT Meters - 5 Years</td>
<td>Easy</td>
</tr>
<tr>
<td>6</td>
<td>PC9</td>
<td>How many connection terminals are there in Three phase CT (3P3W) and Three Phase CT (3P4W) energy meters?</td>
<td>7 and 10</td>
<td>9 and 12</td>
<td>10 and 12</td>
<td>12 and 14</td>
<td>Tough</td>
</tr>
<tr>
<td>7</td>
<td>PC9</td>
<td>What is the standard secondary voltage of PT phase to phase?</td>
<td>100 Volt</td>
<td>110 Volt</td>
<td>150 Volt</td>
<td>200 Volt</td>
<td>Medium</td>
</tr>
<tr>
<td>8</td>
<td>PC8</td>
<td>Where should be the location of consumer Meters</td>
<td>Always at entry point of consumer premises</td>
<td>Inside the consumer premises under lock and key</td>
<td>In separate closed location where assessibility is not possible</td>
<td>All of these</td>
<td>Easy</td>
</tr>
<tr>
<td>9</td>
<td>PC9</td>
<td>How many seals are fixed on meter terminal cover</td>
<td>one or two</td>
<td>Three</td>
<td>Five</td>
<td>Not required</td>
<td>Easy</td>
</tr>
<tr>
<td>10</td>
<td>PC9</td>
<td>Meter's Sealing Points after manufacturing and test/calibration are placed at</td>
<td>Meter body and cover</td>
<td>Meter test terminal block</td>
<td>Meter terminal cover &amp; Meter cabinet</td>
<td>At MDI reset terminal</td>
<td>Easy</td>
</tr>
<tr>
<td>11</td>
<td>PC9</td>
<td>Accuracy class three phase LT CT energy meters should be</td>
<td>Class 0.1</td>
<td>Class 0.2</td>
<td>Class 0.5</td>
<td>Class 2</td>
<td>Medium</td>
</tr>
<tr>
<td>12</td>
<td>PC18</td>
<td>If the reference Y phase is removed from the 3 phase, 3 wire meter</td>
<td>Meter will record 50%</td>
<td>Meter will not work</td>
<td>No effect. Meter will record accurately.</td>
<td>Meter will give more reading</td>
<td>Tough</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Question</td>
<td>100 Kilo Ohm</td>
<td>500 Kilo Ohm</td>
<td>1 Mega Ohm</td>
<td>50 Mega Ohm</td>
<td>Difficulty</td>
</tr>
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<tr>
<td>13</td>
<td>PC18</td>
<td>If the reference Neutral is removed from the 3 phase, 4 wire meter</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Meter will record 50%</td>
<td>Meter will not work</td>
<td></td>
<td>No effect. Meter will record accurately.</td>
<td>Meter will give more reading</td>
<td>Medium</td>
</tr>
<tr>
<td>14</td>
<td>PC9</td>
<td>What should be the insulation resistance of single Phase energy meter between voltage coil and current coil in megger test</td>
<td>100 Kilo Ohm</td>
<td>500 Kilo Ohm</td>
<td>1 Mega Ohm</td>
<td>50 Mega Ohm</td>
<td>Medium</td>
</tr>
<tr>
<td>15</td>
<td>PC9</td>
<td>Rated LT CT secondary current in energy meter is up to?</td>
<td>1 ampere</td>
<td>5 ampere</td>
<td>10 ampere</td>
<td>50 ampere</td>
<td>Easy</td>
</tr>
<tr>
<td>16</td>
<td>PC20</td>
<td>Polarity of CT’s terminals as P₁,P₂, S₁, and S₂ are tested (Checked) with the help of?</td>
<td>With Megger as IR test</td>
<td>With Galvanometer and a 1.5 Volt DC cell</td>
<td>With multi meter for continuity test</td>
<td>Clip-ON meter for current test</td>
<td>Tough</td>
</tr>
<tr>
<td>17</td>
<td>PC6</td>
<td>Minimum clearance from building of low and medium voltage lines and service lines required for vertical and horizontal as per CEA regulations shall be?</td>
<td>2.5 metre and 1.2 metre</td>
<td>3.5 metre and 1.2 metre</td>
<td>3.5 metre and 1.0 metre</td>
<td>3.7 metre and 1.5 metre</td>
<td>Medium</td>
</tr>
<tr>
<td>18</td>
<td>PC8</td>
<td>For installation of 1-ph meter against New Connection / Load Enhancement request from consumer, installation of which electrical equipment by consumer is must for sanctioned load equal to or greater than 5KW.</td>
<td>MCB</td>
<td>ELCB</td>
<td>ACB</td>
<td>MOCB</td>
<td>Easy</td>
</tr>
<tr>
<td>19</td>
<td>PC8</td>
<td>DISCOM's or Utility's distribution line which is terminated up to the consumer's premises is known as?</td>
<td>Service Line</td>
<td>Distribution Line</td>
<td>Feeder Line</td>
<td>Main Line</td>
<td>Easy</td>
</tr>
<tr>
<td>20</td>
<td>PC6</td>
<td>To lay service line across a street minimum Clearance required above ground of the lowest conductor of low and medium voltage (650 V) line shall as per CEA regulation is?</td>
<td>8 metre</td>
<td>6 metre</td>
<td>5.8 metre</td>
<td>4.8 metre</td>
<td>Medium</td>
</tr>
<tr>
<td>21</td>
<td>PC15</td>
<td>State an abnormal wiring condition for Single phase energy meter?</td>
<td>Earth load</td>
<td>Missing neutral</td>
<td>Mixed neutral</td>
<td>All of these</td>
<td>Easy</td>
</tr>
<tr>
<td>22</td>
<td>PC14</td>
<td>State under which condition ELT will glow in Single Phase energy meter</td>
<td>Earth load</td>
<td>Missing neutral</td>
<td>Mixed neutral</td>
<td>Reverse current</td>
<td>Easy</td>
</tr>
<tr>
<td>23</td>
<td>PC9</td>
<td>For 90 kW industrial load which type of energy meter will be installed on LT system</td>
<td>Three phase whole current electronic meter of rating 20-60 A</td>
<td>Three phase LT CT electronic meter of CTR-60/5A</td>
<td>Three phase LT CT electronic meter of CTR-100/5A</td>
<td>Three phase LT CT electronic meter of CTR-200/5A</td>
<td>Medium</td>
</tr>
<tr>
<td>24</td>
<td>PC9</td>
<td>Ratings of CT’s and LT CT meters will used for 100 kW sanctioned load is</td>
<td>100/5A</td>
<td>200/5A</td>
<td>300/5A</td>
<td>400/5A</td>
<td>Medium</td>
</tr>
<tr>
<td>25</td>
<td>PC11</td>
<td>Cable size of the Service Line for the sanctioned load of (5-10KW) is</td>
<td>2 core 10 sq. mm</td>
<td>2 core 25 sq. mm</td>
<td>4 core 10 sq. mm</td>
<td>4 core 25 sq. mm</td>
<td>Easy</td>
</tr>
<tr>
<td>26</td>
<td>PC14</td>
<td>State the function of prepaid Single phase energy meter installed at consumer’s premises.</td>
<td>It record energy as per tariff in terms of amount in rupees</td>
<td>It disconnect the supply from its in built relay</td>
<td>It is rechargeable electronically</td>
<td>All of these</td>
<td>Tough</td>
</tr>
<tr>
<td>27</td>
<td>PC9</td>
<td>State the name of hand held device used for meter data is collection</td>
<td>COMMON METER READING INSTRUMENTS (CMRI)</td>
<td>Data recorder (DR)</td>
<td>Meter Reader (MR)</td>
<td>Modem</td>
<td>Medium</td>
</tr>
<tr>
<td>28</td>
<td>PC26</td>
<td>Power factor is ratio of</td>
<td>kW/kVA</td>
<td>kW/kVAR</td>
<td>kVAR/kW</td>
<td>kVAR/kVA</td>
<td>Easy</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Active Power ( kW = \sqrt{3} \times V L \times I L \times \cos \phi ) where ( VL, IL ) and ( \cos \phi ) stands for</td>
<td>Line Volt</td>
<td>Line current</td>
<td>Power Factor</td>
<td>All of these</td>
<td>Difficulty</td>
</tr>
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<tr>
<td>29</td>
<td>PC9</td>
<td></td>
<td>Line Volt</td>
<td>Line current</td>
<td>Power Factor</td>
<td>All of these</td>
<td>Easy</td>
</tr>
<tr>
<td>30</td>
<td>PC9</td>
<td>If reactive power (kVAR) drawn by a particular load is zero, it means the load is operating at</td>
<td>leading power factor</td>
<td>lagging power factor</td>
<td>Unity power factor</td>
<td>None of these</td>
<td>Medium</td>
</tr>
<tr>
<td>31</td>
<td>PC20</td>
<td>What are the uses of Digital Multimeter</td>
<td>To measure the Potential across lines in Volts, Resistance of circuit in Ohms.</td>
<td>To Find value of current up to 1 Amp (1000 mA), Continuity of wiring in circuit.</td>
<td>Frequency in Hertz, Inductive Reactance &amp; Capacitive Reactance.</td>
<td>All of these</td>
<td>Easy</td>
</tr>
<tr>
<td>32</td>
<td>PC23</td>
<td>How many are the types of consumer energy meters ?</td>
<td>Single Phase Meter</td>
<td>Three Phase meter (Whole current and LT CT)</td>
<td>HT Meter (With CT and PT)</td>
<td>All of these</td>
<td>Easy</td>
</tr>
<tr>
<td>33</td>
<td>PC12</td>
<td>Under balance load condition when current in each phase is same the current in neutral will be?</td>
<td>Zero</td>
<td>5% of phase current</td>
<td>25% of phase current</td>
<td>50% of phase current</td>
<td>Easy</td>
</tr>
<tr>
<td>34</td>
<td>PC9</td>
<td>In consumer bill maximum demand in kVA is calculated on time integral of</td>
<td>15 minutes</td>
<td>30 minutes</td>
<td>60 minutes</td>
<td>5 minutes</td>
<td>Medium</td>
</tr>
<tr>
<td>35</td>
<td>PC12</td>
<td>What do you mean by Load Unbalance</td>
<td>When difference of current between phase and neutral exceeds 30%, the event will be logged as load unbalance.</td>
<td>When difference of current between phase and neutral exceeds 5%, the event will be logged as load unbalance.</td>
<td>When difference of current between phase and neutral exceeds 10%, the event will be logged as load unbalance.</td>
<td>When difference of current between phase and neutral exceeds 15%, the event will be logged as load unbalance.</td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Polyphase whole current meter is always classified as?</td>
<td>three phase four wire meter</td>
<td>single phase three wire meter</td>
<td>Three phase single wire meter</td>
<td>single phase two wire meter</td>
<td></td>
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<tr>
<td>36</td>
<td>PC23</td>
<td>A consumer connection for billing purpose are classified according to tariff as</td>
<td>Industrial</td>
<td>Commercial</td>
<td>Domestic</td>
<td>All of these</td>
<td>Easy</td>
</tr>
<tr>
<td>37</td>
<td>PC9</td>
<td>A consumer connection for billing purpose are classified according to tariff as</td>
<td>Industrial</td>
<td>Commercial</td>
<td>Domestic</td>
<td>All of these</td>
<td>Easy</td>
</tr>
<tr>
<td>38</td>
<td>PC9</td>
<td>Apparent power kVA is</td>
<td>$\sqrt{3} \times V_L \times I_L \times \cos \phi$</td>
<td>$3 \times V_P \times I_P \times \cos \phi$</td>
<td>$\sqrt{3} \times V_L \times I_L \times \sin \phi$</td>
<td>$3 \times V_P \times I_P$</td>
<td>Medium</td>
</tr>
<tr>
<td>39</td>
<td>PC8</td>
<td>When installing meter indoors in the consumer's premises ensure</td>
<td>Visually traceable” and “joint-free” incoming cable</td>
<td>Clearly visible seals for easy inspection</td>
<td>Ensuring proper height &amp; location for easy readability</td>
<td>All of these</td>
<td>Easy</td>
</tr>
<tr>
<td>40</td>
<td>PC17</td>
<td>Monthly Billing of consumption of electricity is based on</td>
<td>Consumption of Current</td>
<td>Consumption of voltage</td>
<td>Consumption of energy unit in kWh meter reading</td>
<td>Energy meter size</td>
<td>Easy</td>
</tr>
<tr>
<td>41</td>
<td>PC12</td>
<td>For LT three phase 3½ 150 sq. mm cable what will be CT ratio</td>
<td>50/5A</td>
<td>100/5A</td>
<td>150/5A</td>
<td>200/5A</td>
<td>Medium</td>
</tr>
<tr>
<td>42</td>
<td>PC11</td>
<td>What is the standard height of meter to maintain for installation?</td>
<td>Below one metre</td>
<td>One to two metre</td>
<td>Above two metre</td>
<td>At three metre</td>
<td>Easy</td>
</tr>
<tr>
<td>43</td>
<td>PC8</td>
<td>In LT 3 phase service line phase to phase voltage at consumer premises should be up to?</td>
<td>11 kV</td>
<td>1000 V</td>
<td>415 V</td>
<td>650 V</td>
<td>Easy</td>
</tr>
<tr>
<td>44</td>
<td>PC1</td>
<td>Consumer Energy meters are installed as per</td>
<td>Sanction load</td>
<td>Consumer load</td>
<td>Network Load</td>
<td>All of these</td>
<td>Easy</td>
</tr>
<tr>
<td>45</td>
<td>PC9</td>
<td>Resistance is the?</td>
<td>property of materials to oppose the flow of electricity</td>
<td>property of materials to flow the electricity</td>
<td>property of materials to generate the electricity</td>
<td>None of these</td>
<td>Easy</td>
</tr>
</tbody>
</table>
| Question Number | Code | Question                                                   | Voltage | Current | Resistance (Ω) | All Options | Difficulty
|-----------------|------|------------------------------------------------------------|---------|---------|----------------|-------------|-----------
| 46              | PC9  | The unit of electric current is                            | Volt    | Ampere  | Ohm (Ω)        | All of these| Easy      
| 47              | PC9  | Which instrument is used to measure insulation resistance of an energy meter | Ampere Meter | Volt Meter | Megger | Multi meter | Easy      
| 48              | PC15 | If there is abnormality in connection and meter is Tampered then | Meter shall show “FAULT” in the display. | Meter shall show “TAMPER” in the display. | Meter shall show “UNSERVICEABLE” in the display. | Meter shall show “DAMAGE” in the display. | Easy      
| 49              | PC6  | What is the standard depth of trench prepared to lay LT 3 phase cable from ground including sand bed? | 0.5 metre | 0.75 metre | 1.0 metre | 1.2 metre | Medium    
| 50              | PC3  | The Potential transformers (PT) have winding connections as? | Y/Y (Star to Star) | Δ/Y (Delta to Star) | Δ/Δ (Delta to Delta) | None of these | Tough      
| 51              | PC3  | State which tool is used for making a hole?               | Screw driver | Pipe Wrench | Combination Plier | Drill machine | Easy      
| 52              | PC3  | Name the Tool use to make punch lugs/sockets/thimbles for terminal connections? | Plier | Chisel | Hammer | Crimping Tool | Easy      
| 53              | PC9  | In live LT lines current is measured by instrument?       | Galvano meter | Clamp ‘ON’ or Tong tester | Multi meter | Megger | Easy      
| 54              | PC10 | Who can avail PTW to work in an electrical job?           | Authorized person nominated by DISCOM/Utility. | Any Asst. Manager or Assistant Engineer | Any Officer | Any Supervisor | Medium    
<p>| 55              | PC9  | Base current (lb) of single phase energy meter of 10 – 60 A is? | 1 Ampere | 5 Ampere | 10 Ampere | 20 Ampere | Medium    |</p>
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<th>Performance Criteria (PC)</th>
<th>Question</th>
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<th>Complexity</th>
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<tr>
<td>1</td>
<td>PC5</td>
<td>what Precautions to be taken while working on live line?</td>
<td>Line clear permit is taken from authorities</td>
<td>Circuit is in off condition</td>
<td>Equipment / Line is properly earthed</td>
<td>All of these</td>
<td>Easy</td>
</tr>
<tr>
<td>56</td>
<td>PC9</td>
<td>The Imax (Maximum current) of whole current three phase meter (10 – 60 A) is taken as?</td>
<td>10 Ampere</td>
<td>40 Ampere</td>
<td>60 Ampere</td>
<td>80 Ampere</td>
<td>Easy</td>
</tr>
<tr>
<td>57</td>
<td>PC6</td>
<td>Standard voltage of LT AC Single phase supply between phase and neutral is required as</td>
<td>220 V</td>
<td>230 V</td>
<td>240 V</td>
<td>250 V</td>
<td>Medium</td>
</tr>
<tr>
<td>58</td>
<td>PC8</td>
<td>Standard declared frequency of Alternating Current (AC) supply is required as</td>
<td>47.5 Hz</td>
<td>49.5 Hz</td>
<td>50 Hz</td>
<td>51 Hz</td>
<td>Easy</td>
</tr>
<tr>
<td>59</td>
<td>PC9</td>
<td>State the multiply factor to record correct energy consumption if energy meter of 200/5 A is connected with CTs of ratio 100/5 A.</td>
<td>Reading X 1/2</td>
<td>Reading X 1</td>
<td>Reading X 2</td>
<td>Reading X 1/4</td>
<td>Tough</td>
</tr>
<tr>
<td>60</td>
<td>PC8</td>
<td>As per Regulatory Electricity supply code and performance standard regulations. If supply of domestic consumers fail in urban area the same should be restored within</td>
<td>48 hrs</td>
<td>24 hrs</td>
<td>12 hrs</td>
<td>6 hrs</td>
<td>Easy</td>
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</table>

PSS/N 2001 : Use of Basic Health & Safety Practices for Power related work
<table>
<thead>
<tr>
<th></th>
<th></th>
<th><strong>PC1</strong></th>
<th><strong>Rubber mats are placed in front of electric panel for:</strong></th>
<th><strong>Electric safety during operation</strong></th>
<th><strong>Workplace decoration</strong></th>
<th><strong>To avoid injury due to fall</strong></th>
<th><strong>To avoid slippage</strong></th>
<th><strong>Easy</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>PC7</td>
<td><strong>what is the first requirement to take up work on the live line?</strong></td>
<td>PTW for shut down</td>
<td>Tools and tackles</td>
<td>Ladder</td>
<td>Safety sign board</td>
<td><strong>Medium</strong></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>PC5</td>
<td><strong>CAUTION ORDER TAG is always used in conjunction with a PTW?</strong></td>
<td>To ensure line is clear dead from all source</td>
<td>Earth chain on line is provided</td>
<td>HT line is dead and earth from isolator</td>
<td>All of these</td>
<td><strong>Medium</strong></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>PC12</td>
<td><strong>What is process after getting the shutdown of a equipment / line?</strong></td>
<td>Switch off incoming line</td>
<td>test the same by neon tester</td>
<td>should be earthed after discharge rod</td>
<td>All of these</td>
<td><strong>Easy</strong></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>PC5</td>
<td><strong>How to avoid Electrical accidents ?</strong></td>
<td>Use Guards or Barriers &amp; Replace covers</td>
<td>Unused openings in cabinets, boxes and fittings must be closed (no missing knockouts)</td>
<td>Junction boxes, Pull boxes and fittings must have approved covers</td>
<td>All of these</td>
<td><strong>Easy</strong></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>PC4</td>
<td><strong>why we used the hand gloves during work on the live lines?</strong></td>
<td>For firm grip of hand tools</td>
<td>For safety from electric shock</td>
<td>So that hands remain clean from dust</td>
<td>All of these</td>
<td><strong>Easy</strong></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>PC4</td>
<td><strong>General Causes of Accidents are</strong></td>
<td>Working without authority.</td>
<td>Use of improper T &amp; P ie; using Pliers instead of Screw-Driver or Spanner, not using insulated Pliers or screw - driver etc.</td>
<td>Non-use of safety equipments and T &amp; P like - ladder, Zola, waist belt/rope, hand gloves, D.O. operating rod, Earthing rod, etc.</td>
<td>All of these</td>
<td><strong>Easy</strong></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>PC4</td>
<td><strong>General Causes of Accidents are</strong></td>
<td>Doing work in an unsafe way, such as throwing T &amp; P/ line material or doing hasty work</td>
<td>Working in insufficient light</td>
<td>Using higher capacity fuse or by passing the fuse</td>
<td>All of these</td>
<td><strong>Easy</strong></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>PC27</td>
<td><strong>Severity of the electrical shock on the human body depends on</strong></td>
<td>Path of current through the body</td>
<td>Amount of current flowing through the body (amps)</td>
<td>Duration of the shocking current through the body</td>
<td>All of these</td>
<td><strong>Medium</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>The responsibility of Consumer Meter Technician towards safety is</strong></td>
<td>To act so as to provide Protection to the public</td>
<td>To act so as to provide Safety to your fellow employees</td>
<td>To provide safety to self</td>
<td>All of these</td>
<td>Easy</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>12</td>
<td>PC4</td>
<td>The responsibility of Safety of Consumer Meter is with</td>
<td>Job knowledge</td>
<td>Safety of equipments</td>
<td>Safety of self and safety of others</td>
<td>All of these</td>
<td>Easy</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>PC2</td>
<td>SAFETY - Means</td>
<td>S- Spreading safety awareness everywhere, A-Avoiding accidents</td>
<td>F- Free your job from hazards. E- Exercise care &amp; caution at work place.</td>
<td>T- Think before doing anything, Y- You &amp; You only can promote safety</td>
<td>All of these</td>
<td>Easy</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>PC5</td>
<td>Fundamental knowledge that any power worker should Know</td>
<td>Authorization to work on power equipment and Line clear approach</td>
<td>EARTHING arrangement, Earth rods are to be withdrawn before returning line clear</td>
<td>Deployment of proper tools</td>
<td>All of these</td>
<td>Easy</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>PC12</td>
<td>Why do people work in an Unsafe manner?</td>
<td>Lack of Knowledge &amp; Job Dissatisfaction</td>
<td>Improper Motivation &amp; Personal Problem</td>
<td>Over Confidence.</td>
<td>All of these</td>
<td>Easy</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>PC8</td>
<td>what is Discharge Rod?</td>
<td>A insulated rod having hook at on side connected with earth lead</td>
<td>A bamboo of 8 feet having arrow on one side</td>
<td>A rod having wet cloth to cool down the hot spot</td>
<td>A neon sign rod which indicate and beep when put close to live line</td>
<td>Medium</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>PC8</td>
<td>what is the function of discharge rod?</td>
<td>The discharge rod is used to discharge the static &amp; induction charge to earth</td>
<td>The discharge rod is used for cutting the branches of tree touching the HT line</td>
<td>The discharge rod is used for removing the birds nest, kites from live line</td>
<td>The discharge rod is used to hook the jumpers for connections in over head lines</td>
<td>Medium</td>
<td></td>
</tr>
<tr>
<td></td>
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<td></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>PC4</td>
<td>What are Unsafe conditions?</td>
<td>Inadequate guards, wearing Loose dress like Dhoti, Kurta, Pyjama and Slipper (Chappals)</td>
<td>Lack of earth connection while working on Electrical systems, Defective tools, equipment or supplies</td>
<td>Poor housekeeping</td>
<td>All of these</td>
<td>Easy</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>PC7</td>
<td>What are the PPE’s (personal protective equipments) should be used during O/H electrical work?</td>
<td>Safety helmets with shield or spectacles</td>
<td>Safety gloves and shoes</td>
<td>Safety belt with full body harness</td>
<td>All of these</td>
<td>Easy</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>PC20</td>
<td>Gloves are made of rubber because:</td>
<td>Rubber is elastic</td>
<td>Rubber is durable</td>
<td>Rubber is cheaper</td>
<td>Rubber is an insulator</td>
<td>Easy</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>PC7</td>
<td>Which safety tool required for working on heights?</td>
<td>Safety Belt</td>
<td>Zola &amp; rope</td>
<td>Ladder</td>
<td>All of these</td>
<td>Easy</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>PC7</td>
<td>Portable ladders are normally made of</td>
<td>Wood</td>
<td>Aluminium</td>
<td>Fibreglass</td>
<td>All of these</td>
<td>Easy</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>PC7</td>
<td>The ladder is placed at an angle from ground to inclined vertical plane at?</td>
<td>90°</td>
<td>75°</td>
<td>60°</td>
<td>45°</td>
<td>Tough</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>PC20</td>
<td>What does this sign Indicates?</td>
<td>Broken arrows likely</td>
<td>Danger: High Volt electricity</td>
<td>Take a sharp left, then a sharp right</td>
<td>Accident prone area</td>
<td>Easy</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>PC20</td>
<td>What does this sign Indicates?</td>
<td>Danger cause fatal</td>
<td>Caution</td>
<td>No Entry</td>
<td>Electric crematorium</td>
<td>Medium</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>PC7</td>
<td>What are the relevant health and safety requirements applicable in a work place?</td>
<td>Individuals should be physically fit</td>
<td>Mentally alert</td>
<td>Not suffering from any serious ailment</td>
<td>All of these</td>
<td>Easy</td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>PC20</td>
<td>Importance of working in clean and safe environment practices &amp; procedures are emphasized during</td>
<td>The induction training</td>
<td>Working in a Electricity Distribution Company</td>
<td>Public meetings</td>
<td>A &amp; B correct</td>
<td>Easy</td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>PC20</td>
<td>What does this sign Indicates?</td>
<td>Drinking Water</td>
<td>Fire Extinguisher</td>
<td>First Aid</td>
<td>Danger</td>
<td>Easy</td>
<td></td>
</tr>
</tbody>
</table>
### 29. PC23
**what is fire?**
- Combination of Fuel, Heat and Air
- Combination of oil and water
- Combination of water and air
- None of these

**Easy**

### 30. PC4
**Hazards due to short circuits may result from:**
- Too many devices plugged into a circuit, causing heated wires and possibly a fire
- Wire insulation melting, which may cause arcing and a fire in the area where the overload exists, even inside a wall
- Lack of over current protection
- All of these

**Easy**

### 31. PC19
**What are the classes of fire?**
- **Class A:** wood, paper, cloth, trash, plastics-solids that are not metals
- **Class B:** flammable liquids- gasoline, oil, grease, acetone. Includes flammable gases.
- **Class C:** flammable gas & live electrical equipment-LPG, Natural Gas, Methane etc, & fire on electrical equipment,
- **Class D:** Metal- potassium, sodium, aluminium, magnesium and A, B & C
- **Class E:** Electrical equipments, wiring, Electrical panel that initiated the fire is no longer receiving electricity

**Medium**

### 32. PC23
**Most common types of fire extinguishers are**
- Dry Chemical (ABC, BC, DC)
- Carbon Dioxide (CO2)
- Mechanical Foam type and full of sand buckets and water
- All of these

**Medium**

### 33. PC33
**Easy method of Artificial Respiration is**
- Sylvester's method
- Schaffer's method
- Mouth to Mouth Resuscitations Method
- None of the above

**Medium**

### 34. PC28
**The First-aid-box should have**
- All type of dressing cotton / Patty.
- Clean and sterilized cotton pads & Tincture - iodine.
- Eye drops, Boric Powder
- All of these

**Easy**

### 35. PC4
**How much Clearance required in a street between ground and lowest overhead conductor for 650 volt?**
- 5.8 meter
- 7 metre
- 10 metre
- 15 metre

**Tough**
### General Precautions to be Followed by Employees for Good Housekeeping

Tools and materials shall not be placed where they may cause tripping or stumbling hazards or where they may fall and strike any person below.

Spilt oil and chemicals shall be cleaned up immediately.

Dirty and oily waste and rags, broken bulbs & glass shall be deposited in an approved metal container and disposed off as soon as practicable.

All of these

---

### PC35

In case of any accident (fatal or non-fatal) the detailed report is submitted to

- Electrical Inspector of area within 24 hrs.
- JE of the section within 24 hrs.
- Electrical Inspector of area within 12 hrs.
- Co-worker of the work site within 24 hrs.

---

### PC4

When the 650 V line passes adjacent to the building a horizontal clearance should be

- 3.2 metres from the nearest point of the building
- 1.2 metres from the nearest point of the building
- 4.2 metres from the nearest point of the building
- 5.2 metres from the nearest point of the building

---

### PC27

Severity of the electrical shock depends on

- Path of current through the body
- Amount of current flowing through the body (amps)
- Duration of the shocking current through the body
- All of these

---

### PC8

What is the use of a Chain in overhead lines?

- Used to give tools and accessories by ground staff to lineman
- Cordon the area for traffic diversion
- Use to short circuit the overhead line to earth to avoid back feed of supply
- For connecting the separate overhead lines

---

PSS/ N 1336 : Work Effectively with Others
<table>
<thead>
<tr>
<th>S No</th>
<th>Performance Criteria (PC)</th>
<th>Question</th>
<th>Option A</th>
<th>Option B</th>
<th>Option C</th>
<th>Option D</th>
<th>Complexity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PC3</td>
<td>Your one of colleague gets badly injured at site. What will you do after first aid?</td>
<td>Immediately bring him to nearby hospital</td>
<td>Report the matter to seniors</td>
<td>Pass on the information to all colleagues</td>
<td>All of these</td>
<td>Easy</td>
</tr>
<tr>
<td>2</td>
<td>PC8</td>
<td>Your one of colleague has pronounced by public on an unethical act. What will you do?</td>
<td>Report the matter to your seniors</td>
<td>Call your colleagues to fight with public</td>
<td>Try to settle the matter with public</td>
<td>Warn the public for dire consequence</td>
<td>Medium</td>
</tr>
<tr>
<td>3</td>
<td>PC10</td>
<td>Why would you need good Listening skills</td>
<td>Ability to listen well allows you to understand your daily tasks</td>
<td>Good listener helps to build good relation with all staffs and supervisor</td>
<td>Good listening skills are a key ingredient for building good team spirit</td>
<td>All of these</td>
<td>Easy</td>
</tr>
<tr>
<td>4</td>
<td>PC1</td>
<td>Customer Service Standards are:</td>
<td>Listen to the Customer,</td>
<td>Communicate effectively, Resolve issues &amp; problems</td>
<td>Inform &amp; Acknowledge</td>
<td>All of these</td>
<td>Easy</td>
</tr>
<tr>
<td>5</td>
<td>PC9</td>
<td>The supply of consumers fail, the same is restored within time as per supply code and performance standard regulations. Now what will you do when consumer offer you some sort of obligation?</td>
<td>Accept the obligation and keep it</td>
<td>Accept the obligation and share with your supervisor</td>
<td>Show etiquette behaviour and say no to accept bribe</td>
<td>Disconnect the consumer line and report to supervisor</td>
<td>Tough</td>
</tr>
<tr>
<td>6</td>
<td>PC4</td>
<td>What are the Duties and Responsibilities of Consumer Meter Technician working in a Power Distribution Company?</td>
<td>He shall be responsible to ensure that the code of safety rules is followed by him and his colleagues</td>
<td>He shall associate with meter testing Schedules, after completing the testing of each connection hand over the report to his superiors.</td>
<td>He shall maintain diaries showing the day to day work done and get the signatures of his superiors</td>
<td>All of these</td>
<td>Easy</td>
</tr>
</tbody>
</table>
7. **How to succeed in team work?**
   - Recognize Your Role
   - Take Ownership of the Team Goals
   - Earn Trust, Communicate Openly & Be Flexible with Others
   - All of these
   - **Medium**

8. **Characteristics of disciplined behaviour are**
   - Be Punctual
   - Maintain work standards
   - Right attitude towards work
   - All of these
   - **Medium**

9. **Grievances can be handled through**
   - Acknowledging Grievance
   - Gathering facts
   - Quick & Timely Action
   - All of these
   - **Easy**

10. **Which of the following are benefits of having a Positive Attitude?**
    - Lower Stress
    - Increased Energy and Enthusiasm
    - Less anxiety & increased emotional well being
    - All of these
    - **Medium**

---

### Ace Assessments

**Viva (Consumer Energy Meter Technician) Total Question - 10**

(Answering of each steps in sequence carry equal marks with total 4 viva in each question)

**Job role energisation of new connection from overhead or underground Line**

**Shut down procedures**

**Step 1:** Shutdown availed from competent authority and PTW issued

**Step 2:** Safety Zone is created. First supply is isolated from both sides of line then it is tested by Neon tester and then discharged through discharge rod. After that chains are placed over to ensure lines are short and earth.

**Step 3:** Metering team is allowed to work after confirmation that they are equipped with safety equipments.

**Step 4:** Service line connections are done.

**Step 5:** Clearance given by metering team all the shorts are removed and all the members are kept away from the site and counted.

**Step 6:** Clearance is given and supply of that area is made normal.
Stating of aforesaid steps is mandatory for all participants

**Question No.1**
- a. What is the height of service line across street
- b. What is the height of service line along a street
- c. What is the height of service line when erected elsewhere than along or across street if bare
- d. What is the height of service line when erected elsewhere than along or across street if insulated

**Question No. 2**
- a. How many terminals are there in 3Phase 4 Wire meter having 3 CTs
- b. How many terminals are there in 3Phase 4 Wire meter having 4 CTs
- c. How many terminals are there in 3Phase 3 Wire meter having 2 CTs
- d. How many terminals are there in 3Phase 4 Wire Whole current meter
- e. How many terminals are there in Single Phase 2 Wire meter

**Question No.3**
- a. How much earth resistance required at meter box
- b. Why earth connection is at zero potential
- c. All equipments and accessories are connected with earth why
- d. What is the depth of earth pit

**Question No.4**
- a. How you will differentiate HT and LT ABC in overhead system (*HT has three insulated and LT has 4 or 5 insulated cables*)
- b. What is function of messenger wire in ABC (*It act both as neutral and earth*)
- c. What specific precaution is taken on ABC line (*Every third pole is made earth to keep good earth*)
- d. How service line is connected through LT ABC (*Through IPC*)

**Question No.5**
- a. Where you will install a new meter at consumer premises (*At entry point in open, easily assessable and viewed protected from weather condition*)
- b. At what height meter should be install (*At 1 to 2 meter easily readable*)
- c. What should be the height of service line at consumer premises (*4 metre*)
d. What should be height of service line if it is passing over vehicular road (6 metre)

**Question No.6**

a. State the accuracy class of single phase meter used in domestic residential area (1 or 2)

b. State the accuracy class of Three phase whole current meter used in commercial area (0.5 or 1)

c. State the accuracy class of LT CT 3 phase meter used in industrial area (0.5)

d. State the accuracy class of 33 kV HT meter installed in Grid station (0.2)

**Question No.7**

a. **How many lines are laid in LT distribution have street light and state their name** (Total six, 3phase, 1street light, 1neutral and 1earth)

b. **Why rating of neutral conductor is less than phase conductor** (Under balance load neutral current is zero thus under mixed unbalance load it remain around half of phase current)

c. **What is the function of two-line cross arm in LT overhead** (It is used to support the guard wires below the conductor also support the lineman to stand on it while attending complaint to check and repair the lines)

d. **State the function of guard wire** (For safety in case of live conductor snapped it touches guard wire before falling on the ground thus supply trip. Guard wire are connected with earth and at distance of one meter from pole across the line)

**Question No.8**

a. How many seals are fixed in single phase meter (Minimum 6, 2 on meter body, 2 on terminal cover and 2 on box)

b. How many seals are fixed in Polyphase meter (Minimum 8, 3 on meter body, 1 on MDI, 2 on terminal cover and 2 on meter box)

c. How many seals are fixed in LT CT meter (Minimum 10, 3 on meter body, 1 on MDI, 2 on terminal cover, 2 on CT box and 2 on meter box chamber)

d. How many seals are fixed in HT pole mount meter (Minimum 18, 3 on meter body, 1 on MDI, 2 on terminal cover, 2 on meter box chamber, 4 on stand pipe and 6 on CT-PT unit)

**Question No.9**

a. In routine test of an energy meter what is standard for No load test (115% of reference volt)

b. In routine test of an energy meter what is standard value for AC volt withstand test (2 kV)

c. In routine test of an energy meter what is standard value for Starting current test (0.4% or 0.1% of basic current)

d. In routine test of an energy meter what is standard value for Insulation resistance (5 M ohm and 50 M ohm)

**Question No.10**

a. Draw the abnormal wiring condition of earth load, what meter display and affect on recording
b. Draw the abnormal wiring condition of Partial earth load, what meter display and affect on recording

Partial Earth Load


c. Draw the abnormal wiring condition of missing neutral, what meter display and affect on recording

Missing Neutral


d. Draw the abnormal wiring condition of Mixed Neutral, what meter display and affect on recording
Ace Assessments
Practical Test of Consumer Energy Meter Technician
Total Question -5, Time of Execution of each assignment –15 to 30 minutes

Question No. 1
Job role installation of single phase energy meter through overhead system
Material required
1. Energy Meter Single phase
2. Meter box
3. Armored cable 2X10 Sq. mm or 2X 25 Sq. mm
4. Cable glands
5. Jubilee clips
6. Clamps or saddles, Fastener, bolts, Lugs
7. DP main switch, MCB board, ELCB
8. MS slotted, bracket angle grouted on wall at 4 metre height,
**Electrical Tools:** Plier, Screwdrivers, Drill m/c, Hammer, Crimping tool, Tester, Test lamp, Cutter, Spanner and Tool kit.

**Safety Tools & PPE’s:** Helmet, Gloves, Danger signboard, safety belt, Safety signboard, safety boot, Tagging, Rubber mat, Mask, Spectacle, Rope, Series test lamp, Ladder

**Procedure how to install energy meter, connections and energisation**

Each participant will identify all the aforesaid items

**Carry following job within stipulated period with a group of two candidates**

1. Grout the meter box on wall at 2 metre height using drill m/c and fastener
2. Fit the energy meter in meter box with all three screws
3. Insert the cable in meter box with cable glands duly cable ends prepared for termination
4. Tightening of glands, jubilee clips and earth connection on box and meter body
5. Crimping of lugs and meter connections both incoming and outgoing terminals
6. Outgoing lead connected to consumer’s ELCB/MCB/DP main switch
7. Incoming cable (Service line) properly clamp with saddles up to bracket
8. Fit service cable anchor
9. Energise consumer supply with consumer’s main ‘OFF’
10. Test supply available on meter terminals
11. Test energy meter on load by switching ‘ON’ consumer’s main
12. Seal energy meter terminal block and meter box door

**Question No. 2**
**Job role installation of single phase energy meter through Bus-Bar box (Loop connection)**
**Material required**
Same as above connection from Bus-Bar box in place of item No.8 MS angle bracket

![Single Phase 2 way Bus Bar](image1)
![Three phase 3 way Bus Bar](image2)
![Three phase 8 way Bus Bar](image3)

**Procedure how to install energy meter, connections and energisation**
Each participant will identify all the aforesaid items

**Carry following job within stipulated period with a group of two candidates**

1. Grout the meter box on wall at 2 metre height using drill m/c and fastener
2. Fit the energy meter in meter box with all three screws
3. Insert the cable in meter box with cable glands duly cable ends prepared for termination
4. Tightening of glands, jubilee clips and earth connection on box and meter body
5. Crimping of lugs and meter connections both incoming and outgoing terminals
6. Outgoing lead connected to consumer’s ELCB/MCB/DP main switch
7. Incoming cable (Service line) properly clamp with saddles up to bracket
8. Insert the cable in meter box with cable glands duly cable ends prepared for termination
9. Get the PTW of Service pillar or feeder pillar from where Bus Bar is energised
10. Switch ‘OFF’ supply. Place ‘Do not operate tag’ at incoming main
11. Ensure supply is dead at Bus Bar by series test lamp
12. Insert the cable in Bus Bar box with cable glands duly cable ends prepared for termination with sockets
13. Tightening of glands, jubilee clips and earth connection on Bus Bar box
14. Energise consumer supply with consumer’s main ‘OFF’
15. Test supply available on meter terminals
16. Test energy meter on load by switching ‘ON’ consumer’s main
17. Seal Bus Bar cover and energy meter terminal block and meter box door

**Question No. 3**

**Insulation Resistance Measurement of Single phase energy meter**

**Material required**

1. Insulation Megger
2. Single phase energy meter
Participant is asked to Test of the ohmic resistance
a) Between frame & current, voltage circuits connected together: Required results 5 Mega Ohm

b) Between each current (and voltage circuit) & each and every other circuit: Required results 50 Mega Ohm

**Question No. 4**

**Job role : Polarity test of LT CT’s**

**Material required**

1. LT CT’s any rating from 100/5A to 400/5A
2. 1.5 Volt DC cell
3. Galvanometer or Multimeter
4. Two Flexible chords
5. Single core cable 10 sq. mm – one metre
Each participant will demonstrate the testing procedure and identify the Polarity of CT’s terminals as P₁, P₂, S₁ and S₂ with the help of Multimeter or Galvanometer and DC 1.5 Volt battery.

Secondary terminals are connected on +ve & -ve terminals of galvanometer (or Multimeter DC terminals for current or Volt) With the help of 1.5 Volt battery pulse DC current is injected on the inserted line through CT where P₁ and P₂ are marked and S₁ and S₂ are identified according to direction of pointer.

**Question No. 5**

**Job role:** Installation of LT CT Energy meter with box and making connection

**Material required**
1. LT CT energy meter Any rating (3X-/5A, 3X40 Volt)
2. Set of ring type LT CT (3) any rating from 100 to 400A having secondary leads of 1.5 Metres
3. Double door LT CT meter box
4. 4X50 sq. mm PVC cable 3 metre
5. 2.5 or 4 sq. mm flexible wire – 10 metres (2.5 metre four pieces)

Participant will install the meter and make the meter connections by inserting each CT single core cable and prepare potential terminals.
LT CT meter connection diagram

CT METER