**EBOH FAVOUR IHEANYI**

**COMPUTER ENGINEERING**

**18/ENG02/105**

**QUESTION TWO**

**SOLAR/HYBRID DESIGN**

**STATION LOAD**

|  |  |  |  |
| --- | --- | --- | --- |
| **LOAD** | | | |
|  | **LIGHTING** | |  |
| **Type** | **Number** | **Wattage (W)** | **Total Wattage (W)** |
| LED | page2image5818336  39  page2image5823952 | - | 3080 |
| page2image5831024 | **HVAC** | |  |
| 10,000BTU (1hp) LG inverter AC | page2image5827696  5  page2image5812304 | 880 | 4400 |
| page2image5822080 | **COMPUTER ACCESSORIES** | |  |
| Desktop | 2  page2image5814592 | 100 | 200 |
| Laptop | 2  page2image5831232 | 45 | 90 |
| Printer | 1 | 50 | 50 |
| Photocopier | page2image5824576  1 | 1200 | 1200 |
| **OTHERS** |  |  |  |
| Fridge | page2image5838720  2  page2image5839760 | 200 | 400 |
| fuel dispenser (2 no. single pump & 3 no. double pump) | 5 | - | 7500 |
| er | 2 | 300 | 600 |
|  |  |  |  |
|  | **Station Load(W)** | | **17,520.00** |

**BILL OF QUANTITY**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S/N** | **Description** | **Quantity** | **Unit Cost(N)** | **Total Cost(N)** |
| 1 | Schneider Electric XW+8548e Hybrid Inverter | 3 | ₦1,499,000.00 | ₦4,497,000.00 |
| 2 | Schneider Electric 80A-600Vdc MPPT Charge Controller | 6 | ₦690,000.00 | ₦4,140,000.00 |
| 3 | DC-rated lightning arrestor for DC input of Charge Cont | roller6 | ₦55,000.00 | ₦330,000.00 |
| 4 | Schneider Conext System Control Panel (SCP) | 1 | ₦95,000.00 | ₦95,000.00 |
| 5 | MidNite Solar MNEDC-250 DC Breaker Disconnect (250A) | 4 | ₦145,000.00 | ₦580,000.00 |
| 6 | MidNite Solar MNEDC-175 DC Breaker Disconnect (175A) | 3 | ₦145,000.00 | ₦435,000.00 |
| 7 | MidNite Solar MNEPV-100 DC Breaker (100A) | 6 | ₦20,000.00 | ₦120,000.00 |
| 8 | Schneider 63A DC Miniature Circuit Breaker, 500VDC, 2 Pole(part no. A9N61539) | 6 | ₦15,000.00 | ₦90,000.00 |
| 9 | Exide 2V NMST 1500AH AGM deep cycle battery | 72 | ₦199,500.00 | ₦14,364,000.00 |
| 10 | 330W mono-crystalline Canadian solar panels | 79 | ₦58,000.00 | ₦4,582,000.00 |
| 11 | Sm ( Solar rail) rail | 40 | ₦13,000.00 | ₦520,000.00 |
| 12 | Mid clamp | 120 | ₦450.00 | ₦54,000.00 |
| 13 | End clamp | 80 | ₦450.00 | ₦36,000.00 |
| 14 | Lfoot | 120 | ₦600.00 | ₦72,000.00 |
| 15 | 1C- 4mm2 flex copper cable | 500 | ₦450.00 | ₦225,000.00 |
| 16 | 1C-35mm2 flex copper cable | 120 | ₦1,900.00 | ₦228,000.00 |
| 17 | 1C-50mm2 flex copper cable | 35 | ₦2,650.00 | ₦92,750.00 |
| 18 | 1C-120mm2 flex copper cable | 30 | ₦5,250.00 | ₦157,500.00 |
|  |  |  | Total Material Cost | ₦30,618,250.00 |
|  |  |  | Installation Cost | ₦2,000,000.00 |
|  |  |  | 2.5% Contingency | ₦815,456.25 |
|  |  |  | **Grand Total** | **₦33,433,706.25** |