**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  | page2image581833639 page2image5823952 | -  | 3080  |
| page2image5831024 | **HVAC**  |  |
| 10,000BTU (1hp) LG inverter AC  | page2image58276965 page2image5812304 | 880  | 4400  |
| page2image5822080 | **COMPUTER ACCESSORIES**  |  |
| Desktop  | 2 page2image5814592 | 100  | 200  |
| Laptop  | 2 page2image5831232 | 45  | 90  |
| Printer  | 1  | 50  | 50  |
| Photocopier  | page2image58245761  | 1200  | 1200  |
| **OTHERS**  |  |  |  |
| Fridge  | page2image58387202 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**  |