Inverters Quiz – Page 1

Name:	Date:

Question 1 **Marks: 10**

An inverter:

Choose one answer.

- Changes AC electricity into DC
- Is not necessary in a grid-direct system
- Removes the sine wave from a current flow
- Changes DC electricity into AC

Question 2 **Marks: 10**

Complete the following sentence:

A grid-direct inverter produces a?

Choose one answer.

- Straight wave
- Linear wave
- Square wave
- Sine wave
- Modified sine wave

Question 3 **Marks: 9**

Choose three benefits of grid-direct PV systems compared to other types of PV systems:

Choose at least one answer.

- Provide back-up power
- Less frequent battery maintenance
- Fewer components
- More efficient
- Lower voltage
- Less expensive

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Question 4 **Marks: 10**

In order to meet [ ] requirements, if utility power shuts down, a grid-direct inverter must also shutdown.

Fire Code Requirements
UL Requirements
Anti-islanding

Question 5 **Marks: 10**

Arrange the following components in the order that energy flows in a grid-direct PV system, starting at the DC side. Use the numbers 1 to 5 to indicate the order (e.g., PV Array [1]).

PV array [ ]
AC service panel [ ]
Inverter [ ]
AC utility meter [ ]
Utility power lines [ ]

Question 6 **Marks: 9**

Select the three most important parameters when specifying a grid-direct inverter:

Choose at least one answer.

- Warranty
- Integrated disconnect
- DC input voltage window
- Efficiency
- Type of ground fault protection
- AC output voltage
- The power rating

Question 7 **Marks: 10**

Grid-direct inverters use [ ] to operate the connected array at the "knee" of its IV curve.

Maximum power point tracking
Open circuit voltage
Short circuit current

Question 8 **Marks: 9**

Choose three benefits of micro-inverters:

Choose at least one answer.

- Reduced operating temperatures
- Individual module output can be monitored
- Ease of maintenance
- Maximum Power Point of each module is tracked
- Mature technology
- Array can have multiple orientations and tilt angles
- Fewer inverters to install

Question 9 **Marks: 9**

Rank the following locations for a grid-direct inverter (in the Northern Hemisphere) from best to worst (1 = best):

Exposed, east facing wall [ ]
Exposed, north facing wall [ ]
Exposed, south facing wall [ ]

Question 10 **Marks: 10**

A micro-inverter is wired to:

Choose one answer.

- Groups of low-wattage modules
- An appropriately sized array
- An individual module
- A larger, feeder inverter

Question 11 **Marks: 10**

True or false:

The rated efficiency is the primary consideration when specifying an inverter.

Answer:

	True		False

Question 12 **Marks: 10**

Match the following system designs with the likely outcome:

Array Voc greater than inverter maximum input voltage [ ]

Inverter operates at lower than optimal power or is offline
The inverter may be damaged or the warranty voided
Inverter operates at the maximum power point.

Array Vmp less than inverter minimum input voltage [ ]

Inverter operates at lower than optimal power or is offline
The inverter may be damaged or the warranty voided
Inverter operates at the maximum power point.

Inverter Quiz - Results

Name:	Date:	Score:

Answers