



Certified Digital Twin Engineer (CDTE)

Ten Sample Questions

These ten questions are written at the difficulty of the live exam. Six carry a figure, a data table, a configuration or a code listing; four are plain scenario questions, as on the live paper. Every one is a scenario a working digital twin engineer would meet, and none of them appears in the live question bank.

The live exam is multistage adaptive: how you score on one stage selects the difficulty of the next, so no two candidates sit the same paper. It is a performance-based exam: each form can carry up to 5 to 12 performance-based questions alongside the multiple-choice questions, which means you build, sequence or complete something rather than only choosing from a list. Answers and full explanations follow each question here; the live exam does not disclose item-level answers.

Question 1

Domain 1: Digital Twin Foundations

DATA

Sarah Miller maps each digital twin type to what it represents, with one description missing.

Twin type	What it represents
Component twin	A single part
Asset twin	(to choose)
System twin	Many assets together
Process twin	A whole operation

Table 1.1 Twin types and scope.

What does an asset twin represent?

- ☐ A A single part
- ☐ B One machine
- ☐ C The full factory
- ☐ D A supplier contract

Correct answer: B

An asset twin models one working piece of equipment, such as a single pump or motor, so it represents one machine. A component twin covers a single part, a system twin covers many assets together, and a process twin covers a whole operation.

Question 2

Domain 2: Modeling and Simulation

DATA

James Carter reviews the model fidelity levels, with one level of detail missing.

Fidelity level	Detail captured
Low	Rough shape only
Medium	Key behaviours
High	(to choose)
Live	Synced to sensors

Table 2.1 Model fidelity levels.

What does a high fidelity model capture?

- ☐ A Only the outline
- ☐ B Nothing captured
- ☐ C Fine detail
- ☐ D Just the color

Correct answer: C

A high fidelity model captures fine detail and accurate physics, so it reflects the real asset closely. A low fidelity model shows only a rough outline, and a live model adds a continuous sensor sync on top of the detail.

Question 3

Domain 3: Data Integration and IoT Connectivity

CONFIG

Olivia Davis lists how each sensor feed maps to a twin property, with one source unknown.

```
temp_sensor -> twin.temperature
vib_sensor  -> twin.vibration
flow_meter  -> twin.flowrate
???         -> twin.pressure
```

Listing 3.1 Sensor to property mapping.

Which source most likely feeds twin.pressure?

- ☐ A psi_sensor
- ☐ B temp_sensor
- ☐ C flow_meter
- ☐ D vib_sensor

Correct answer: A

A pressure reading in psi comes from a pressure sensor, so psi_sensor is the source that feeds twin.pressure. The temperature, vibration, and flow sources are already mapped to their own properties in the listing.

Question 4

Domain 4: Analytics, AI and Visualization

DATA

Liam Anderson maps each analytics capability to the question it answers, with one answer missing.

Capability	What it answers
Descriptive	What happened
Diagnostic	Why it happened
Predictive	(to choose)
Prescriptive	What to do next

Table 4.1 Analytics capabilities.

What does predictive analytics answer?

- ☐ A What already happened
- ☐ B The exact cause
- ☐ C The screen layout
- ☐ D What will happen

Correct answer: D

Predictive analytics uses past data to forecast what will happen next, such as when a part may fail. Descriptive analytics reports what happened, diagnostic explains why, and prescriptive suggests what to do next.

Question 5

Domain 5: Lifecycle and Operations

CONFIG

Ava Thompson lists the stages a digital twin moves through during its life.

```
1 design    build the model
2 operate   run beside the asset
3 monitor   watch live data
4 retire     archive the twin
```

Listing 5.1 Twin lifecycle stages.

In which stage does the twin run beside the real asset?

- ☐ A Planning
- ☐ B Operate
- ☐ C Retire
- ☐ D Design

Correct answer: B

During the operate stage the twin runs alongside the real asset and mirrors its behaviour in service. The design stage builds the model first, and the retire stage archives the twin once the asset is decommissioned.

Question 6

Domain 6: Security, Governance and Standards

DATA

David Brown maps each control to its purpose, with one purpose left blank.

Control	Purpose
Access control	Limit who connects
Encryption	(to choose)
Audit log	Record every change
Data owner	Approve data use

Table 6.1 Controls and purpose.

What is the purpose of encryption?

- ☐ A Hide the data
- ☐ B Draw the 3D model
- ☐ C Speed the network
- ☐ D Delete old records

Correct answer: A

Encryption scrambles data so that only authorized parties can read it, which hides the data from anyone who intercepts it. Access control limits who can connect, the audit log records changes, and the data owner approves how data is used.

Question 7

Domain 1: Digital Twin Foundations

A team builds a detailed 3D model of a pump, but it never receives live data from the real pump and cannot show its current state. What makes it a true digital twin?

- ☐ A A bigger 3D model
- ☐ B A printed manual
- ☐ C A live data link
- ☐ D More color detail

Correct answer: C

A digital twin is defined by a live data link that keeps the model in step with the real asset. Without that connection the model is only a static drawing, and adding more detail or color does not make it reflect the current state.

Question 8

Domain 2: Modeling and Simulation

An engineer wants to study how a bridge flexes under different loads before it is built. Which kind of model best supports this what-if simulation?

- ☐ A A static photo
- ☐ B A spreadsheet list
- ☐ C A paper sketch
- ☐ D A physics model

Correct answer: D

A physics based model applies real forces and material behaviour, so it can simulate how the bridge flexes under different loads. A photo, sketch, or plain list cannot compute the response to a what-if load.

Question 9

Domain 3: Data Integration and IoT Connectivity

Sensors on a wind turbine send readings every second, but the twin updates only once a day, so it always shows stale values. What best closes the gap?

- ☐ A Remove the sensors
- ☐ B Stream data live
- ☐ C Update once a month
- ☐ D Print the readings

Correct answer: B

Streaming the sensor data live keeps the twin in step with the turbine so its values stay current. Updating less often or removing sensors makes the data even more stale, and printing readings does not update the twin.

Question 10

Domain 4: Analytics, AI and Visualization

A twin dashboard shows hundreds of raw numbers with no chart, so operators cannot spot a rising trend quickly. What best improves it?

- ☐ A Add clear charts
- ☐ B Hide all the data
- ☐ C Show more numbers
- ☐ D Remove the alerts

Correct answer: A

Adding clear charts turns raw numbers into a visual pattern, so operators can spot a rising trend at a glance. Showing more numbers adds clutter, hiding data removes insight, and removing alerts hides warnings the operators need.

