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| 1 | What is the purpose of a design methodology in IoT? |  |
| A | To develop hardware components for IoT devices |
| B | To define software development processes |
| C | To create a design framework for IoT systems |
| D | All of the above |
| 2 | Which of the following is an advantage of using a microcontroller? |  |
| A | Low power consumption |
| B | High processing power |
| C | Large amount of memory |
| D | High speed communication |
| 3 | What is a System on Chip (SoC)? |  |
| A | A computer that can fit in a palm |
| B | A specialized microprocessor that is designed to perform a specific task |
| C | A single integrated circuit that contains all the components of a complete computer system |
| D | A type of software that controls hardware devices |
| 4 | What is an Arduino board? |  |
| A | A type of computer processor |
| B | A type of microcontroller board that can be programmed |
| C | A type of single-board computer |
| D | A type of wireless communication device |
| 5 | Which of the following is an advantage of using structured data? |  |
| A | It can be processed and analyzed more easily |
| B | It can contain more information than unstructured data |
| C | It is more secure than unstructured data |
| D | It can be accessed more quickly than unstructured data |
| 6 | Which of the following is an example of data at rest? |  |
| A | A video conference call |
| B | A spreadsheet saved on a computer's hard drive |
| C | An email being sent to a recipient |
| D | A website being accessed by a user |
| 7 | What is Apache Spark used for in the Hadoop ecosystem? |  |
| A | Data storage and retrieval |
| B | Cluster management |
| C | User interface design |
| D | Real-time data processing |  |
| 8 | Which of the following are functional layers in smart parking? |  |
| A | Information collection |  |
| B | System deployment |  |
| C | Service Dissemination |  |
| D | All of the above |  |
| 9 | Which of the following is not a smart irrigation system? |  |
| A | Drip irrigation |  |
| B | Sprinkler irrigation |  |
| C | Flood irrigation |  |
| D | None of the above |  |
| 10 | What is IoT security? |  |
| A | Ensuring the security of the Internet |  |
| B | Ensuring the security of IoT devices and networks |  |
| C | Ensuring the security of social media platforms |  |
| D | None of the above |  |

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| 1 | Which of the following is not an example of an embedded system? |  |
| A | A calculator |
| B | A smartphone |
| C | A microwave oven |
| D | A laptop computer |
| 2 | Which of the following is an important consideration in the selection of hardware components for IoT devices |  |
| A | Cost |
| B | Processing power |
| C | Energy efficiency |
| D | All of the above |
| 3 | Which of the following is a disadvantage of using an SoC? c d) |  |
| A | Limited flexibility in design |
| B | High power consumption |
| C | High system complexity |
| D | High cost |
| 4 | Which of the following is a typical component of an Arduino board? |  |
| A | LCD display |
| B | Ethernet port |
| C | Wi-Fi antenna |
| D | All of the above |
| 5 | Which of the following is an advantage of using unstructured data? |  |
| A | It can be organized more easily than structured data |
| B | It can contain more information than structured data |
| C | It is more secure than structured data |
| D | It can be accessed more quickly than structured data |
| 6 | Which of the following is an example of data at motion? |  |
| A | A document saved on a computer's hard drive |
| B | A video being streamed over the internet |
| C | An image file being edited in Photoshop |
| D | A database being updated in real-time |
| 7 | Which of the following is a feature of the Hadoop Distributed File System (HDFS)? |  |
| A | Real-time data analysis |
| B | Data compression |
| C | Fault tolerance |
| D | High-speed data processing |  |
| 8 | Which of the following is a feature of Apache Kafka? |  |
| A | High-speed data processing |  |
| B | Real-time data analysis |  |
| C | Fault tolerance |  |
| D | Data compression |  |
| 9 | Which of the following is a smart agriculture technology? |  |
| A | Drones |  |
| B | GPS |  |
| C | AI |  |
| D | All of the above |  |
| 10 | Hadoop Architecture consists of |  |
| A | HDFS |  |
| B | YARN |  |
| C | Map Reduce |  |
| D | All the above |  |

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| 1 | **Which of the following is an advantage of using an embedded system?** |  |
| A | It is inexpensive |
| B | It has a short development time |
| C | It is easy to upgrade |
| D | It is portable |
| 2 | **------------- defines the attributes of the objects and relationships between objects.** |  |
| A | Process Specification |
| B | Domain Model Specification |
| C | Information Model Specification |
| D | Service Specifications |
| 3 | **Which of the following is true regarding the development of an SoC?** |  |
| A | It involves designing and integrating all the components into a single chip |
| B | It can only be done by a large team of hardware engineers |
| C | It does not require any software development |
| D | It is a simple and straightforward process |
| 4 | **Which of the following is a typical component of a NodeMCU board?** |  |
| A | a) LCD display |
| B | Ethernet port |
| C | Wi-Fi antenna |
| D | All of the above |
| 5 | **What is the main difference between structured and unstructured data?** |  |
| A | The way the data is stored on a physical medium |
| B | The level of organization and format of the data |
| C | The way the data is encrypted |
| D | The size of the data |
| 6 | **Which of the following is a disadvantage of using Hadoop?** |  |
| A | High cost of implementation |
| B | Limited support for data analysis |
| C | Difficulty in managing data storage |
| D | Slow data processing speed |
| 7 | **What is a Spark cluster?** |  |
| A | A group of Spark executors |
| B | A component that manages the Spark driver |
| C | A data structure for parallel processing in Spark |
| D | All of the above |  |
| 8 | **Which of the following is not a smart home technology?** |  |
| A | Voice assistants |  |
| B | Smart locks |  |
| C | Traditional light switches |  |
| D | Smart security cameras |  |
| 9 | **Which of the following is a benefit of smart industries?** |  |
| A | Increased productivity |  |
| B | Reduced costs |  |
| C | Improved safety |  |
| D | All of the above |  |
| 10 | **RDD means?** |  |
| A | Resilient Distributed Datasets |  |
| B | Reconfigure Distributed Datasets |  |
| C | Resilient Data Distribution |  |
| D | Resilient Distributed Disk |  |

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| 1 | **Which of the following is NOT part of the building blocks of an IoT system?** |  |
| A | Sensors and actuators |
| B | User Interface (UI) design |
| C | Data processing and analytics |
| D | Connectivity (networking) |
| 2 | **In IoT systems, what is the role of an IoT platform?** |  |
| A | To manage user interfaces only |
| B | To provide hardware-level integration only |
| C | To serve as an intermediary between IoT devices and cloud-based services |
| D | To perform data storage tasks only |
| 3 | **Which of the following is a key feature of embedded computing systems?** |  |
| A | They are designed for general-purpose computing |
| B | They require high-level user interfaces |
| C | They can execute specific tasks with real-time constraints |
| D | They are typically used for large-scale data processing |
| 4 | **Which of the following is a challenge in IoT data analytics?** |  |
| A | Data is too structured for analysis |
| B | Limited real-time data processing |
| C | Easy integration with traditional databases |
| D | High availability of data |
| 5 | **Which of the following describes Xively?** |  |
| A | A cloud-based IoT platform for device management and data analytics |
| B | A cloud platform designed for data storage only |
| C | A programming language for IoT |
| D | A machine learning framework |
| 6 | **Which of the following is NOT part of the** **Hadoop ecosystem**? |  |
| A | HDFS |
| B | Map Reduce |
| C | Spark |
| D | MongoDB |
| 7 | **Which of the following best describes** **NoSQL databases**? |  |
| A | They rely on SQL for data querying |
| B | They are only used for analytical purposes |
| C | They are non-relational databases designed to handle unstructured data |
| D | They are relational databases with complex queries |  |
| 8 | **What is the primary use of IoT in infrastructure management?** |  |
| A | To optimize traffic flow and monitor road conditions in real-time |  |
| B | To store data for further analysis |  |
| C | To build complex user interfaces |  |
| D | To improve food delivery times |  |
| 9 | **Which of the following is an IoT application in building security systems?** |  |
| A | Energy-efficient lighting controls |  |
| B | Smart locks and surveillance cameras for real-time monitoring |  |
| C | Automated climate control |  |
| D | Predictive maintenance for industrial machines |  |
| 10 | **How does IoT enhance the functionality of home appliances?** |  |
| A | By enabling remote control and automation through smartphones or voice assistants |  |
| B | By reducing the power usage of the appliances only |  |
| C | By ensuring appliances are only powered on during peak hours |  |
| D | By creating more complex mechanical systems |  |