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1. Improvements due to loT deployments usually happen in stages. The main phases typically progress through the following stages:

O 1) (1) data collection and visualization, (2) insights and learning, and (3) optimizations

and actions.

O b) (1) data collection (2) insights and learning, (3) visualization, and (4) optimizations

and actions.

O c) (1) data collection and visualization, (2) insights and cloud-based learning, and (3)

optimizations and actions.

O d) (1) data collection (2) insights and local learning, (3) visualization, and (5) optimizations

and actions.

2.P2P communications can be somewhat distinct in the sense that they can take place

O a) between nodes using IEEE 802.15.4 networks.

• b) between nodes using IP-based protocols that are Internet compatible, such as 6LoWPAN

O c) between nodes using simplified or application-specific protocols that are not Internet

compatible, such as Bluetooth or legacy industrial devices.

d) between nodes using protocols with a star topology that are not Internet compatible, such as LoRaWAN and SigFox.

3. Digitization of analog values produces a so-called quantization error. Which of the following quantities does not affect its magnitude?

O a) the ADC resolution

O b) the accuracy of the ADC

O c) the amount of memory of the processing system

d) the noise from the external sources connected to the ADC input

4. The SCADA systems performs

O a) commissioning of end nodes in industrial loT

O b) de-commissioning of end nodes in industrial loT

O c) visualization and product line or plant-level control

O d) ciphering operations in end nodes in industrial loT

5. A gateway performs the following control plane functions

O a) Security and system management

O b) event and alert processing

• c) alert processing and data storage

d) event processing and data storage

6. Simple forms of metadata include

a) sensor types, etigineering units in which they report datn, range, aceurncy, minimum and maximum values of the day, manufactarer, model and serin numbers, location of sensors,

and the edge node

• b) sensor types, engineering units in which they report date, range, accuracy, and minimum and maximum values, manufacturer, model and serial numbers,location of sensors, and the edge node

O c) sensor types, engincering units in which they report data, range, accurcy, serialized data, manufacturer, model and serial numbers,location of sensors, and the edge node

O d) sensor types, engincering units in which they report dats, range, accuracy, encrypted data, manufacturer, model and serial numbers,location of sensors, and the edge node

7. Major considerations in determining where and low to process data in loT systems does not include

O .) Availability and cost of bandwidth

© b) Latency requirements for time-critical operations

O c) Type of data serialization and representation.

O d) Security and data control or privacy concerns

8. The link Layer

O a) In the OSI model, in much of the literature, and in many practical implementations, is

treated as one layer

O b) in IEEE 802.15.4 is treated as one layer

O c) in the Internet model is specified a single link layer and do not subdivide it further

• d) deals only with the physical transmission of signals.

9.most common topology of Ethernet nowadays is

O a) Ring

• b) Mesh

O c) a tree-like physical topology

O d) star

10. In IEEE 802.15.4 Reduced-function RFD node

• a) can participate in a network of any topology

O b) can talk to any other device

O c) is limited to star topology

O d) can be a PAN coordinator

11. Routing in 6 LoWPAN mesh configurations is commonly implemented using the IPv6 Routing for Low-Power and Lossy Networks (RPL)

O (a) it is a distance vector routing

O b) it is a link state routing

O (c) it is a Open Shortest Path First routing

O d) it uses the Border Gateway Protocol

12. A LoRaWAN class B device

• (a) is reachable in downlink in scheduled receive slots

O b) is always reachable in downlink

• (c) is always reachable in downlink except when transmitting

d) is reachable in downlink only after transmitting an uplink packet

13. The set of CoP methods is

(a) Get, Put, Post, Delete

O b) Get, Put, Post

• (c) Create, Put, Update, Delete

• (d) Create, Put, Post, Delete

14. Software as a Service (SaaS refers to systems where

• (a) an entire application is available from the provider and customers can connect to it using clients such as web browsers and mobile applications.

• (b) users provide their own applications created using programming languages, services,

and tools supported by the provider.

• (c) a cloud vendor is providing managed infrastructure in terms of VMs for rent, network-ing, and some forms of block and object storage that users can request; in this model, users are responsible for providing VM images for execution that may include an operating system, runtime environment, and applications

• (d) a cloud vendor is providing managed infrastructure in terms of VMs for rent, network-ing, and some forms of block and object storage that users can request;

15. Which of the following category of NoSQL databases is less suited for IoT?

• (a) Key-value stores

O (b) Column-oriented databases

• (c) Document-oriented databases

• (d) Graph databases

16. Confidentiality means

• (a) assurance that the data has not been tampered with in transmission or storage.

• (b) protection of transmitted data for use only by authorized parties.

• (c) assurance that the data is from the claimed source