Introduction To Internet Of Things |WEEK 0-12

WEEK 0

1. Which of the following allows us to identify objects and extract information?

a. RFID

b. Sensors

c. Actuators

d. IoT Nodes

2. How many layers does Zigbee consist of?

a. 1

b. 2

c. 3

d. 4

3. Which of the following is not a component of cloud computing?

a. Clients

b. Local Servers

c. Services

d. Applications

4. Which of the following is a distance measuring sensor module?

a. DHT22

b. HC-SR04

c. TSL2591

d. HC-SR505

5. Which of the following is a component in a typical sensor network?

a. Sink

b. Gateway

c. Router

d. All of these

6. Which of the following sensors are responsible for measuring orientation and angular velocity?

a. Accelerometer

b. GPS

c. Temperature

d. None of these

7. "ISA 100.11A" is a wireless networking technology standard. ISA stands for _____ .

a. International Society of Automation

b. International Society of Advancement

c. Industrial Society of Automation

d. Industrial Society of Advancement

8. Which of the following is not a difference between traditional data center and cloud computing?

a. Scalability

b. Flexibility

c. Elasticity

d. Storage

9. Smart grid is also known as the energy internet.

a. True

b. False

10. Can a point of node failure result in the partition of the network in the stationary sensor network?

a. Yes

b. No

WEEK 1

Q1. Which of the following are the enablers of IoT?
a. RFID
b. Nanotechnology
c. Sensors
d. All of the these

Q2. Which of the following is/are NOT a characteristic of IoT?
a. Efficient, scalable and associated architecture.
b. Ambiguous naming and addressing.
c. Abundance of sleeping nodes, mobile and non-IP devices.
d. None of these

Q3. State whether the following statement is True or False.
Statement: The increasing number of devices in IoT is expected to result in an address crunch.
a. True
b. False

Q4. State whether the following statement is True or False.
Statement: The gateway has a unique network prefix, which can be used to identify them globally.
a. True
b. False

Q5. Sometimes, when there is a need for the nodes to communicate directly to the Internet, __ can be used.
a. Sensors
b. Actuators
c. Tunneling
d. None of these

Q6. In ___ a node/network is connected to multiple networks for improved reliability.
a. Transparent roaming
b. Multi-homing
c. None of these
d. Both (a) and (b)

Q7. The IPv6 notation uses _____ values.
a. Roman
b. Hexadecimal
c. Both (a) and (b)
d. None of these

Q8. A _ detects (senses) changes in the ambient conditions or in the state of another device or a system, and forwards or processes this information in a certain manner.
a. Sensor
b. Actuator

c. Both (a) and (b)
d. None of these

Q9. A microphone is an example of an _.
a. Input device and actuator
b. Only actuator
c. Only Transducer
d. Input device and transducer

Q10. The _____ of a sensor is the smallest change it can detect in the quantity that it is measuring.
a. Resolution
b. Bias
c. Noise
d. None of these

Q11. Based on the data type, sensors are classified as _____.
a. Scalar and Vector/Multimedia
b. Only scalar
c. Both (a) and (b)
d. Only vector

Q12. Solenoid valve is an example of _____.
a. Sensor
b. Actuator
c. Processing unit
d. None of these

Q13. An actuator requires a _____ and _____.
a. Control signal and a bias signal
b. Control signal and a source of energy
c. Noise signal and a source of energy
d. None of these

Q14. State whether the following statement is True or False.
Statement: Pneumatic rack and pinion actuators are used for valve controls of water pipes.
a. True
b. False

Q15. Which of the following is NOT a function of an IoT gateway?
a. Switching
b. Routing
c. Protocol conversion
d. Generating noise

WEEK 2

Q1. The full form of MQTT is
a. Message Queue Telemetry Transport
b. Message Query Telemetry Transport
c. Message Queue Telemedicine Transport
d. None of these

Q2. In MQTT, a _____ controls the publish-subscribe messaging pattern.
a. Publishers
b. Message Broker
c. Subscribers
d. All of these

Q3. Which of the following is NOT a component of MQTT?
a. Publishers
b. Users
c. Brokers
d. None of these

Q4. _____ is an extension of MQTT which uses lightweight attribute based encryption. It has _ main stages.
a. SMQTT, three
b. BMQTT, three
c. SMQTT, four
d. None of these

Q5. Which of the following is based on Request-Response model between end-points?
a. MQTT
b. CoAP
c. Both (a) and (b)
d. Neither (a) nor (b)

Q6. The two sub-layers of CoAP are –
a. Messaging and Holding
b. Messaging and Backoff
c. Messaging and Teardown
d. Messaging and Request/response

Q7. Which of the following is used for real-time exchange of structured data?
a. MQTT
b. SMQTT
c. XMPP
d. CoAP

Q8. XMPP uses the _____ architecture.
a. Publish-subscribe
b. Client-server

c. Both (a) and (b)
d. Neither (a) nor (b)

Q9. With respect to AMQP, which of the following message delivery guarantees allow for each message to be delivered certainly as well as to be delivered multiple times.
a. At-least-once
b. At-most-once
c. Exactly-once
d. Both (a) and (b)

Q10. Which of the following is/are NOT an AMQP frame type?
a. Open
b. Close
c. End
d. None of these

Q11. Which of the following is/are NOT the function/functions of the Bindings component of the AMQP protocol?
a. Receives messages and routes them to queues
b. Separate queues for separate business process
c. Consumer receive messages from queues
d. All of these

Q12. Which of the following is/are NOT exchange types in AMQP?
a. Direct
b. Indirect
c. Fan-out
d. Topic

Q13. State whether the following statement is True or False. Statement: The IEEE 802.15.4 is a well-known standard for low data-rate Wireless Personal Area Network (WPAN).
a. True
b. False

Q14. The networking topologies supported in the IEEE 802.15.4 are –
a. Only Star
b. Star and Mesh
c. Only Mesh
d. None of these

Q15. State whether the following statement is True or False. Statement: Periodic transmission of beacon messages does not occur in beacon enabled networks (IEEE 802.15.4).
a. False

WEEK 3

1) State whether the following statement is true or false.

Statement: Wired HART lacks a network layer

a. True

b. False

2) The HART physical layer is derived from _____ protocol and operates only in GHz ISM band.

a. IEEE 802.15.4, 2.4

b. IEEE 802.15.4, 4.8

c. IEEE 802.16.5, 4.8

d None of these

3) State whether the following statement is True or False

Statement Super-frames in HART consist of grouped 20ms wide timeslots.

a True

b. False

4) _____ identifies channels consistently affected by interference and removes them from use.

a. Channel hopping

b. Channel aggregating

c. Channel blacklisting

d. Frequency aggregating

5) The _____ supervises each node in the network and guides them on when and where to send packets.

a. Application manager

b. Network manager

c. Trust manager

d. None of these

6) NFC is designed for use by devices within _____ to each other?

a. Close proximity

b. No near contact

c. Both (a) and (b)

d. None of these

7) _____ contain information which is readable by other devices, however it cannot read information itself

a. Active NFC devices

b. Dumb NFC devices

c. Passive NFC devices

d. None of these

8) NFC devices work on the principle of

a. Magnetic introduction

b. Magnetic induction

c. Both (a) and (b)

d. None of these

9) Which of these is NOT a mode of operation NFC?

a. Server-to-Server

b. Peer-to-Peer

c. Read/Write

d. Card emulation

10) State whether the following statement is true or false

Statement: Paging in Bluetooth is the process of forming a connection between two Bluetooth devices.

a. True

b. False

11) There are _____ modes of operation in Bluetooth.

a. 3

b. 4

c. 5

d. None of these

12) Z wave uses _____ for signaling and control?

a. Light

b. RF

c. Sound

d. None of these

13) Which of the following is/are not a constraint on sensor nodes?

a. Must consume high power

b. Not be adaptive to the environment.

c. Both (a) and (b)

d. None of these

14) _____ are simply those that are unable to perform an operation; this could be because of power failure and environmental events.

a Normal nodes

b. Failed nodes

c. Badly failed nodes

d. None of these

15) Dumb behavior of sensor nodes is _____ in nature (as it is dependent on the effects of the environmental conditions).

a. Temporal

b. Spatial

c. Both (a) and (b)

d. None of these

WEEK 4

Q1. State whether the following statement is true or false.
Statement: Coverage in WSN is defined as the area-of-interest is covered satisfactorily.
a. True
b. False

Q2. If transmission range >= 2* sensing range,
a. Coverage implies greater coverage
b. Coverage implies connectivity
c. Both (a) and (b)
d. None of these

Q3. The two types of reporting in WSN are –
a. Event driven and machine driven
b. Event driven and weather driven
c. Event driven and on demand
d. None of these

Q4. The objective of coverage in WSN is to use a ___ number of sensors and ___ the network lifetime.
a. minimum, minimize
b. minimum, maximize
c. maximum, minimize
d. maximum, maximize

Q5. Select the correct option.
The disadvantages of stationary Wireless Sensor Networks are –
Statement-I: Node failure may result in partition of networks.
Statement-II: Topology cannot change automatically.
a. Statement-I True, Statement-II False
b. Both Statements are False
c. Both Statements are True
d. None of these

Q6. A _____ in MWSN moves in order to collect data from sensor nodes and goes to the sink and delivers the collected data from different sensor nodes.
a. Drop
b. Molecule
c. Mule
d. None of these

Q7. ____ allows distributed sensing carried by humans and the goal is not just to collect data but to allow the common people to assess and share the knowledge.
a. Voluntary sensing
b. Compressive sensing
c. Dynamic sensing
d. Participatory sensing

Q8. Which of the following is/are NOT feature/features of UAV networks?
a. Mesh or star networks
b. Multi-tasking
c. Large coverage area
d. None of these

Q9. Which of the following is NOT a UAV network constraint?
a. Frequent link breakages
b. Prone to malfunction
c. Very Complex
d. None of these

Q10. In _____ configuration, UAVs form multiple star topology. One node from each group connects to the ground station.
a. Multi-star
b. Ring
c. Both (a) and (b)
d. None of these

Q11. The full form of FANET is?
a. Flying Ad Hoc Network
b. Fast Ad Hoc Network
c. Fidelity Ad Hoc Network
d. None of these

Q12. Low-end sensor nodes are those-
a. Whose deployment has high density in order to increase network lifetime and survivability.
b. Who perform basic functions such as data aggregation, auto configuration, and power saving.
c. Both (a) and (b)
d. None of these

Q13. Which of the following are the components of the M2M ecosystem?
a. Trees
b. Ocean
c. Device Providers
d. Non-service users

Q14. State whether the following statement is true or false
Statement: The M2M Device Platform enables access to objects connected to the Internet anywhere any time.
a. True
b. False

Q15. State whether the following statement is true or false
Statement: The M2M Application Platform provides integrated services based on device collected data-sets.
a. True
b. False

WEEK 5

Q1. Company ABC manufactures a room temperature monitor which sends data via protocol X and company MNO manufactures another kind of room temperature sensor which sends data via protocol Y. With respect to this, which among the following correctly captures the said scenario?
a. Homogeneity of IoT
b. Heterogeneity of IoT

Q2. When two IoT devices wish to communicate, semantic conflict in such a scenario in IoT interoperability refers to_____.
a. Two devices built by the same manufacturer
b. Two devices sensing the same physical parameter
c. Two devices having different deployment location
d. Two devices having different processing and business logic

Q3. Which of the following issues needs to be addressed while solving user interoperability?
a. Device characterization and identification
b. Syntactic interoperability
c. Semantic interoperability
d. All of these

Q4. Which UMB interoperability component is responsible for converting physical devices into virtually abstracted ones?
a. UMB Adaptor
b. UMB Core
c. UMB Hypervisor
d. UMB Abstractor

Q5. A Protocol Translation Unit (PTU) acts as a middleware between two IoT devices with different native protocols to enable them communicate with each other by translating the language of one device to the other one and vice versa.
a. True
b. False

Q6. Suppose that a smart CCTV camera has been configured using C++ language. With respect to the device's cosign identification as per the standard definition (A,B,C,D), which among the following the information "Configuration Lang:C++" will be most appropriately mapped ?
a. A
b. B
c. C
d. D

Q7. Which among the following are components of an Arduino UNO Board?
a. LED Power Indicator
b. Digital I/O Pins

c. Analog IN Pins
d. All of these

Q8. What is the series of micro controller chips powering Arduino UNO boards?
a. ATM series
b. X86 series
c. ARM 64 series
d. ATMEGA series

Q9. In Arduino IDE the 'Verify' and 'Upload' buttons perform the exact same task.
a. False
b. True

Q10. Suppose that an Arduino UNO board is connected to a pneumatic sensor which sends tyre pressure as floating point numbers. Which among the functions will you use to read from the sensor?
a. digitalRead()
b. analogWrite()
c. analogRead()
d. None of these

Q11. Consider the following Arduino sketch.

```
int r = 4;
int g = 5;
void setup(){

Serial.begin(9600);
pinMode(r,INPUT);
pinMode(g,__??__);
}

void loop()
{
  int val = analogRead(r);
  if( val > 10)
  {
      digitalWrite(g,HIGH);
  }
  else
  {
      digitalWrite(g,HIGH);
  }
  delay(500);
}
```

What must be inserted in the place of '??' within the second pinMode() function in void setup()?

What must be inserted in the place of '??' within the second pinMode() function in void setup()?
a. INPUT
b. OUTPUT
c. None of these
d. Anyone of these is okay

Q12. For integrating different types of sensors (such as DHT) with Arduino, you would need to install and #include the sensor specific libraries in your sketch.
a. True
b. False

Q13. Which of the following best describes the command given below? ServoDemo.write(180);
a. Creates an instance of the servo
b. Pin writes 180 to the servo
c. Servo moves 180 degrees
d. All of these

Q14. In an Arduino sketch, for the default function void setup(), which of the following is true?
a. Point where the code terminates.
b. Point where the code starts.
c. It iterates over the different tasks in the program.
d. None of the above.

Q15. Which among the following can also be described as a relay, which is an actuator?
a. Pneumatic actuator
b. Motor type actuator
c. Electro-mechanical switch
d. Thermal switch

WEEK 6

Q1. Python doesn't support strict rules for syntax and static variable declaration like C
a. True
b. False

Q2. Fill in the blanks. __ is a data-type in Python.
a. List
b. Tuple
c. Dictionary
d. All of these

Q3. Fill in the blanks. _____are the variables declared inside a function.
a. Immediate variables
b. Global variables
c. Local variables
d. None of these

Q4. What does the open() function return for file operations?
a. File mode
b. File object
c. File name
d. None of these

Q5. Python does not follow rigid indentation.
a. True
b. False

Q6. Which of the following is used to display an image in Python?
a. image.show()
b. image.open()
c. image.name()
d. image.mode()

Q7. Which of the following models does python follow for networking.
a. Client-server
b. P2P
c. All of these
d. None of these

Q8. In python, "with" ensures the file is closed after the operation is completed, but not when an exception occurs.
a. True
b. False

Q9. In Raspberry Pi, GPIO acts only as a digital output.
a. True
b. False

Q10. Which of the following exits the nano editor in the terminal?
a. Ctrl+O
b. Ctrl+X
c. Ctrl+A
d. None of these

Q11. Does Raspberry Pi provide configuration options for cameras ?
a. Yes
b. No

Q12. Does python provide a module for pi-camera ?
a. Yes
b. No

Q13. Which of the following converts energy to motion?
a. Actuator
b. Raspberry Pi
c. All of these
d. None of these

Q14. Which of the following is a property of a Relay.
a. Mechanical switch
b. Electrochemical switch
c. None of these
d. All of these

Q15. Sensors can be neither analog nor digital.
a. True
b. False

WEEK 7

Q1. Raspberry Pi is like a mini computer which can perform a wide range of general purpose tasks.
a. True
b. False

Q2. What is the complete form of GPIO pins on Raspberry Pi devices.
a. General Public Input/Output
b. Generative Purpose Input/Output
c. General Purpose Input/Output
d. Global Purpose Input/Output

Q3. The Python program which you execute on Raspberry Pi to read data from sensors and control actuators has the same syntax and style as any other Python program.
a. False
b. True

Q4. During remote server access by a Raspberry Pi, where the Raspberry Pi acts as a client, the client needs the following?
a. Only IP address of server
b. Only port number
c. Both server IP address and port number
d. Client's IP address

Q5. Which among the following are valid data processing activities
a. Data Splitting
b. Data filtering
c. Data plotting
d. All of the given

Q6. Consider the following Python code snippet. Assume the syntax is correct and all required libraries are imported
var = 'Sensor@Actuator%Arduino'
pt = var.split('%')
print(pt)
What will be the output (See every detail, including the apostrophes carefully)?
a. ['Sensor','Actuator','Arduino']
b. ['Sensor@Actuator','Arduino']
c. ['Sensor','Actuator%Arduino']
d. ['Sensor@Actuator%Arduino']

Q7. Which among the following functions do you use while using MATPLOTLIB to add title to a plot?
a. plot()
b. add()
c. label()
d. title()

Q8. In traditional non software-defined network consisting of a network of switches, suppose OSPF is being used as the routing protocol. In this context which among the following is true.

a. All the switches execute OSPF distributively
b. Only one switch executes OSPF
c. No switch executes OSPF
d. All of these are true

Q9. In SDN, the Operating System (OS) is separated (i.e not strongly coupled) from the physical hardware for each switch.

a. True
b. False

Q10. Which among the following is a popular protocol implementing SDN?

a. OpenSwitch
b. OpenStack
c. OpenFlow
d. OpenEdge

Q11. With respect to Software Defined Networking (SDN), which among the following is true?

a. SDN couples the data plane and control plane.
b. SDN has no relation to either data plane or control plane
c. SDN separates the data plane and control plane.
d. None of the stated.

Q12. Consider the following figure below. To which issue of SDN does this particular figure can be related to?

Match SDN Applications First and Use Normal For Unmatched Packets (Hybrid Default Forwarding)										
Priority	Ingress Port	MAC Source Address	MAC Destination	Protocol	Vlan ID	IP Source Address	IP Destination	Source Port	Destination Port	Instructions
10000	*	*	*	TCP	*	*	10.1.1.20/32	*	80	Forward to Port 1
5000	*	*	*	*	*	*	10.1.1.0/24	*	*	Forward to Port 2
300	*	*	*	*	2600	*	*	*	*	Send to Controller
0	*	*	*	*	*	*	*	*	*	OF Normal

a. Controller placement issue
b. Flow Rule placement issue
c. Hardware placement issue
d. Analysis placement issue

Q13. Suppose that there are two LANs, each configured to be SDN enabled with their own set of switches and controller. Which among the following directional APIs will be used for communication between the two controllers?

a. Northbound API
b. East-Westbound API
c. Southbound API
d. Northeastbound API

Q14. Which among the following is true?

a. Backup Controllers have no use is SDN

b. There is no difference between the main controller and backup controller

c. Backup controllers take over when the main controller goes down

d. It is not a good idea to keep backup controllers.

Q15. IoT being data intensive and having a lot of security concerns, it is a good idea to integrate SDN with IoT to mitigate many of these issues.

a. True

b. False

WEEK 8

Q1. Traditional Wireless Mobile Networks are cost expensive in terms of _?
a. Only CAPEX
b. Only OPEX
c. Both CAPEX and OPEX
d. Neither CAPEX and OPEX

Q2. High mobility of users is one of the key challenges in rule placement for software defined wireless mobile networks.
a. True
b. False

Q3. Which among the following is a solution for mobility-aware flow rule placement in SDIoT?
a. Mobility-Flow
b. Mobile-Flow
c. Mobi-Flow
d. M-Flow

Q4. Cloud, Utility, Grid and _____ have been the major trends in computing
a. Clone
b. Cluster
c. Closure
d. Cloud

Q5. Cloud computing models allow different users to share the same physical resources?
a. True
b. False

Q6. As per NIST Visual Model of Cloud Computing, 'Hybrid Cloud' model and PaaS model both fall in the same category.
a. True
b. False

Q7. When you are accessing Google docs or Microsoft Word online for accessing the features of a document writing software from your browser without specifically installing them, which among the following cloud service models is the most appropriate one that you are using.
a. SaaS
b. PaaS
c. IaaS
d. DaaS

Q8. An organization A wants to deploy a cloud infrastructure, whereby it wants to push majority of the data to a cloud whose servers can be situated anywhere within the globe, but it wants certain private data to be pushed only to cloud servers that are present on-premise and are accessible by only authenticated members of the organization. In this

context which among the following deployment model should be used?
a. Private Cloud
b. Public Cloud
c. Hybrid Cloud
d. Any of these

Q9. Cloud services and resources should be rapidly __ in order to achieve their required performance
a. entrusted
b. elastic
c. enterprise
d. None of the given

Q10. Suppose that a start-up wants to enter into online book delivery business. It wants to create the user interface and the application by itself, but it does not have any networking or storage facility, so it wants to adopt the cloud computing practice. In this respect, which among the following cloud service models is most suitable for the start-up.
a. Only SaaS
b. Neither PaaS nor IaaS
c. Both PaaS and IaaS can be adopted
d. Neither SaaS, PaaS or IaaS

Q11. Data security and client authentication is an issue in which of the following cloud service models??
a. SaaS
b. SaaS and PaaS
c. IaaS
d. All of them

Q12. Network, _____ and application level securities are the three aspects of cloud infrastructure securities.
a. Client
b. Web
c. Host
d. Wireless

Q13. When a new user logs into a cloud framework, the first thing that needs to be done is _____.
a. User should be authenticated
b. User should immediately be granted all the resources
c. User should log off
d. User should be penalized

Q14. Service Level Agreements (SLAs) are mutually agreed by the client (customer) and cloud service provider (CSP) at the beginning. With respect to SLAs, what are the views that SLAs provide?
a. Customer Point of View
b. CSP Point of View

c. Both Customer and CSP Point of View
d. Neither Customer nor CSP Point of View

Q15. CloudAnalyst simulation tool provides GUI and is written on top of CloudSim modules.
a. Yes
b. No

WEEK 9

Q1. Which component of OpenStack do you use to access all the other components?
a. Horizon
b. Glance
c. Neutron
d. None of these

Q2. Which among the following is NOT a component of OpenStack?
a. Horizon
b. Heat
c. Plasma
d. Neutron

Q3. Sensor cloud is simply dumping and organizing of sensor data on cloud computing platforms.
a. True
b. False

Q4. Which among the following are limitations of traditional Wireless Sensor Networks (WSNs)?
a. Procurement Issues
b. Deployment Issues
c. Maintenance Issues
d. All of the given

Q5. In a typical sensor cloud architecture, the sensor cloud infrastructure that provides the virtualization lies _____
a. At the same layer as physical sensor devices
b. At the application layer
c. In between the physical sensor layer and the application layer
d. Sensor cloud does not support virtualization

Q6. Generally speaking, Sensor Cloud Service Providers (SCSPs) are also always the owners of the physical sensors
a. Yes
b. No

Q7. In a typical sensor cloud architecture with virtualization, one virtual sensor can be associated with how many physical sensors?
a. Only one
b. One or more than one
c. None
d. Only two

Q8. Sensor virtualization aims to achieve more _____ in providing sensor based services
a. Complexity
b. Flexibility

Q9. Suppose that you want to start a business to provide some IoT based application, but you do not have the means to develop the application layer logic, neither you have the means to purchase and deploy physical sensors. You can however, rent cloud servers for use and write interface logic for interfacing with other modules. Which among the following actors will be the most suitable for you?

a. Physical sensor owner

b. Application layer developer

c. Sensor Cloud Service Provider (SCSP)

d. You cannot start the business

Q10. Which among the following is implemented along with sensor cloud to make its services and performance better?

a. Cashing

b. Caching

c. Casing

d. Calling

Q11. Which among the following cases is most likely to reduce the overall price of sensor-cloud implementation provided that the data traverses through multiple sensor hops starting from the origin sensor to the sink node, and provided that all owners are honest and charge for only what is required?

a. If physical sensors are owned by multiple owners with high profit margin

b. If all physical sensors are owned by a single owner with uniform profit margin

Q12. Fog computing is aimed to replace cloud computing completely and has no scope for integration with cloud

a. True

b. False

Q13. Suppose data from an IoT device first goes to Fog layer for some basic processing, after which it goes to Cloud layer for advanced processing, then the processed data comes back to the Fog layer and then, it finally comes back to the origin sensor node. In the return journey no processing of data takes place anywhere, just transfer of data takes place.

If 'Tf' is the time taken by the data to travel from sensor to fog and vice versa, and 'Tc' is the time taken by the data to travel from fog to cloud and vice versa, 'Tfp' is the data processing time at fog and 'Tcp' is the data processing time at cloud, what is the total round trip time 'T' taken by data starting from the origin sensor node, processing the data and then back to the sensor node after being processed.

a. $T = Tf + Tc + Tfp + Tcp$

b. b. $T = Tf + Tc$

c. $T = 2(Tf + Tc) + Tfp + Tcp$

d. $T = 4(Tf + Tc + Tfp + Tcp)$

Q14. Consider the standard Fog computing architecture. In which of the following layer will 'very time sensitive data' be processed?

a. Nearest fog node

b. Distant aggregate fog node

c. Cloud
d. Does not matter

Q15. "Network, Accelerator, Compute and Storage" constitute the part of which view of fog computing architecture, as defined by OpenFog Consortium Architecture Working Group?
a. System View
b. Node View
c. Software View
d. None of these

WEEK 10

Q1. Data fusion enables optimum utilization of massive data gathered from multiple sources.
a. True
b. False

Q2. Which of the following is a stage in data fusion?
a. Decision level
b. Feature level
c. Pixel level
d. All of the above

Q3. Which of the following is one of the challenges of Data fusion?
a. Imperfection
b. Conflicts
c. Ambiguity
d. All of the above

Q4. Which of the following is one of the theory of evidence-based mathematical methods of data fusion?
a. Belief function
b. Bayesian analysis
c. ANN
d. None of these

Q5. DLNA stands for Digital Living Network Alliance.
a. True
b. False

Q6. Which of the following are the functional layers in smart parking?
a. Information collection
b. System Deployment
c. Service Dissemination
d. All of these

Q7. Which of the following statements are true about the HAN standards?
Statement I: Physical and MAC layers are defined by IEEE802.15.4.
Statement II: Network layer is defined by Zigbee.
Statement III: Application layer is defined by IEEE802.15.4
a. Statements I and II
b. Statements I and III
c. Statements II and III
d. Statements I, II and III

Q8. Which of the following are true about X-10?
Statement I: It allows remote control of compliant transmitters.
Statement II: It has low speed and data rate.
Statement III: It is adopted by GE.

a. Statement I and II
b. Statement II and III
c. Statement I and III
d. Statement I, II and III

Q9. Fill in the blank. _____enables vehicles to wirelessly share a diverse range of information.
a. Local area network
b. V2X Paradigm
c. V2A Paradigm
d. Metropolitan area network

Q10. Which of the following is a property of Vehicular Ad-hoc Networks?
a. Is based on DSRC
b. Is based on WAVE
c. Guaranteed low latency
d. All of these

Q11. Knob is a switch type of INN.
a. True
b. False

Q12. Which of the following is responsible for central coordination in Body-brain architecture?
a. Body
b. INN
c. Spinal cord
d. None of these

Q13. Which of the following stands for DSRC?
a. Directed Short Range Communication
b. Dedicated Short Range Communication
c. Directed Small Range Communication
d. Dedicated Small Range Communication

Q14. Ad-hoc is a domain of VANET.
a. True
b. False

Q15. What are the disadvantages of V2X communication?
a. Increased traffic safety
b. Tracking of movement
c. Efficient use of fuel
d. None of these

WEEK 11

Q1. What are some of the other names of the smart grids?
a. Electricity with a brain
b. Energy internet
c. ElectroNet
d. All of these

Q2. Smart Grid follows which type of the flow of energy?
a. Bidirectional
b. Unidirectional
c. All of these
d. None of these

Q3. Which of the following is not a benefit associated with smart grids?
a. Efficient transmission of electricity
b. Lower electricity rates
c. Unreliable and insecure electricity
d. Improved security

Q4. Which of the following is a component of smart grid communication?
a. Gateways
b. Smart meters
c. MDMSs
d. All of these

Q5. Fill in the blank. _ can be used as an energy source in on-peak hours.
a. PMUs
b. DAUs
c. PEVs
d. None of these

Q6. Which of the following is a type of Dynamic System Attacks?
a. Replay Attacks
b. Dynamic data injection attacks
c. Covert attacks
d. All of these

Q7. Which of the following statements are true about gateways?
Statement I: Each gateway connects a few closely located smart meters.
Statement II: Gateways communicate mostly based on WiFi.
Statement III: They help in two-way communication.
a. Statements I and II
b. Statements I and III
c. Statements II and III
d. Statements I, II and III

Q8. Fill in the blank. __ is a centralized coordinator for smart grid communication.
a. Gateway

b. Smart meter
c. PMU
d. MDMS

Q9. Fill in the blank. __ are available protocols for smart home appliances.
a. C-Bus
b. DECT
c. EnOcean
d. All of these

Q10. Fill in the blank. IIoT is a network of_____.
a. Physical objects
b. Systems
c. Platforms
d. All of the above

Q11. IIoT is based on Rip & Replace approach.
a. True
b. False

Q12. Which of the following happened in the 1st Revolution?
a. Mass production
b. Internet evolution
c. Automation
d. None of these

Q13. Which of the following is a challenge of IIoT?
a. Worker health and safety
b. Environmental production
c. Optimized operations
d. All of these

Q14. Monitoring and restoration of the traditional electrical grid is done manually.
a. True
b. False

Q15. What is Hadoop used in?
a. Distributed processing of large datasets
b. Large clusters of computers
c. All of these
d. None of these

WEEK 12

Q1. The two types of data analysis are _.
a. **Qualitative and Quantitative**
b. Repetitive and Quantitative
c. Repetitive and Qualitative
d. All of these

Q2. Which of the following is a principle of Qualitative analysis?
a. Notice things
b. Think about things
c. Collect things
d. **All of these**

Q3. Select the statement(s) that denote the type of ANOVA.
Statement I: One way analysis
Statement II: Two way analysis
Statement III: K-way analysis
a. Statement I
b. Statement II
c. **Statements I, II, and III**
d. None of these

Q4. What is the type of the data dispersion?
a. Range
b. Average absolute deviation
c. Variance
d. **All of these**

Q5. The process by which numerical data is analyzed is known as __.
a. Qualitative analysis
b. **Quantitative analysis**
c. None of these
d. All of these

Q6. The mathematical equation that is formulated in the form of relationships between variables is known as __.
a. Logical model
b. Relational model
c. Data dispersion
d. **Statistical model**

Q7. What are the two types of statistical models?
a. Qualitative and quantitative
b. **Complete and incomplete**
c. Regression and dispersion
d. None of these

Q8. Contingency table is also known as?
a. Cross tabulation
b. Cross table
c. All of these
d. None of these

Q9. Advances in sensor and connectivity have disabled preventive care.
a. True
b. False

Q10. Which of the following is a feature of IoT Healthcare?
a. Non-invasive monitoring
b. Cloud-based analytics
c. Wireless transmission
d. All of these

Q11. Which of the following are components of IoT?
a. Sensing layer
b. Aggregated layer
c. Processing layer
d. All of these

Q12. Which of the following is the advantage of activity monitoring?
a. Hard integration
b. Long term monitoring
c. Expensive
d. None of these

Q13. Deep learning based data analysis cannot be performed on videos
a. True
b. False

Q14. Which of the following is true for in-place activity monitoring data analysis?
a. Low power
b. Good network connection required
c. On-device
d. Group-based analytics

Q15. Fill in the blank. Processing the handheld activity device data with artificial intelligence can be used for __.
a. Fall detection
b. Heart rate detection
c. Vehicle detection
d. All of these

ALL THE BEST