

## Sample Questions

Computer Engineering

**Subject Name:** Internet of Things

**Semester:** VI

### Multiple Choice Questions

	<b>Choose the correct option for following questions. All the Questions carry equal marks</b>
1.	The layer number seven of IoTWF standard is
Option A:	Application
Option B:	Data Accumulation
Option C:	<b>Collaboration and Processes</b>
Option D:	Edge computing
2.	In which layer of IoTWF standard is sensors deployed
Option A:	Application
Option B:	<b>Physical devices</b>
Option C:	Connectivity
Option D:	Data abstraction
3.	The standardized architecture of M2M IoT does not achieve
Option A:	Decompose IoT problem to smaller part
Option B:	Identify different technologies at each layer and how they relate to one another
Option C:	Have a process of defining interfaces that leads to interoperability
Option D:	<b>Define a tiered security model that does not enforce the transition points between levels</b>
4.	Which of the following is not new requirements of IoT Data Management and Compute Stack
Option A:	Minimizing latency
Option B:	Increasing local efficiency
Option C:	<b>Reducing the amount of data transmission</b>
Option D:	Conserving network bandwidth
5.	Which of the following an example of position sensor
Option A:	Force gauge
Option B:	Barometer
Option C:	Anemometer
Option D:	<b>Potentiometer</b>
6.	Galvanometer works on which principle
Option A:	<b>Ampere's Law</b>
Option B:	Faraday's Law of Induction
Option C:	Photoconductive Effect

Option D:	Hall Effect
7.	Which of the following is a mechanical actuator
Option A:	<b>Screw Jack</b>
Option B:	Step motor
Option C:	Pneumatic cylinder
Option D:	Electrostatic motor
8.	MEMS stands for
Option A:	Mini Electro Mechanical System
Option B:	<b>Micro Electro Mechanical System</b>
Option C:	Mini Electro Machine System
Option D:	Micro Electro Machine System
9.	Which of the following is disadvantage of Zigbee
Option A:	Does not require knowledge to operate zigbee
Option B:	<b>It is not as secure as wifi based secured system</b>
Option C:	Replacement cost is low
Option D:	It can be used in outdoor wireless communication
10.	Which of the following Access network sublayer works in least range
Option A:	HAN
Option B:	FAN
Option C:	<b>PAN</b>
Option D:	LAN
11.	Which of the following is not part of Layer 2 communication network layer
Option A:	Access Network Sublayer
Option B:	Gateways and Backhaul Sublayer
Option C:	IoT Network Management Sublayer
Option D:	<b>Application and analytics layer</b>
12.	SCADA network mainly focuses on which domain
Option A:	Agriculture
Option B:	Healthcare
Option C:	Utility
Option D:	Transportation
13.	CoAP message has fixed size header field of
Option A:	3 bytes
Option B:	2 bytes
Option C:	<b>4 bytes</b>
Option D:	5 bytes
14.	MQTT protocol works on which method of communication
Option A:	Get Post
Option B:	Send Receive
Option C:	<b>Publish Subscribe</b>

Option D:	Transmit Acknowledeg
<b>15.</b>	Which of the following is not component is not mandatory in Intrusion detection system
Option A:	Proximity sensor
Option B:	Buzzer or alert message
Option C:	<b>Gyroscope</b>
Option D:	IR sensor
<b>16.</b>	Which of the following is an IoT hardware
Option A:	<b>Beaglebone</b>
Option B:	Temboo
Option C:	Kaa
Option D:	Thingspeak
<b>17.</b>	Which of the following is not supported by Raspberry Pi 3
Option A:	GPIO
Option B:	PWM
Option C:	<b>Analog Pins</b>
Option D:	Wifi
<b>18.</b>	Arduino Uno has which of the following
Option A:	40 GPIO pins,
Option B:	four USB 2.0 ports,
Option C:	one micro-SD card slot
Option D:	<b>Analog pins</b>
<b>19.</b>	Which of the following is not a category of sensors
Option A:	Active or Passive
Option B:	Contact or no contact
Option C:	Absolute or relative
Option D:	<b>Short and Long range</b>
<b>20.</b>	When SCADA is deployed in LLN which technology is used
Option A:	TCP
Option B:	UDP
Option C:	<b>MAP-T</b>
Option D:	RTU

<b>21.</b>	What is the full form of SCADA
Option A:	Supervisory Control and Document Acquisition
Option B:	<b>Supervisory Control and Data Acquisition</b>
Option C:	Supervisory Column and Data Assessment
Option D:	Supervisory Column and Data Assessment

<b>22.</b>	MQTT is _____ oriented
Option A:	Data
Option B:	<b>Message</b>
Option C:	Network
Option D:	Device
<b>23.</b>	Which type of sensor is used to measure the distance between the vehicle and other objects in its environment
Option A:	Tactile sensor
Option B:	<b>Ultrasonic sensor</b>
Option C:	Motion sensor
Option D:	Pressure sensor
<b>24.</b>	DHT22 sensor is used to sense
Option A:	Obstacles
Option B:	<b>Humidity</b>
Option C:	Position
Option D:	Resistance
<b>25.</b>	What is ESP8266
Option A:	<b>WIFI module</b>
Option B:	Sensor
Option C:	Board
Option D:	USB cable
<b>26.</b>	Which sensor is LM35
Option A:	Pressure sensor
Option B:	Humidity sensor
Option C:	<b>Temperature sensor</b>
Option D:	Touch sensor
<b>27.</b>	Barometer is which type of sensor _____
Option A:	<b>Pressure sensor</b>
Option B:	Temperature sensor
Option C:	Touch sensor
Option D:	Humidity sensor
<b>28.</b>	Which devices measures gases or liquid
Option A:	Proximity sensor
Option B:	<b>Pressure sensor</b>
Option C:	Temperature sensor
Option D:	Touch sensor
<b>29.</b>	_____ sensor is used for tracking rotation or twist
Option A:	<b>Gyroscope</b>
Option B:	Temperature
Option C:	Pressure

Option D:	Proximity
<b>30.</b>	What is the microcontroller used in Arduino UNO
Option A:	<b>ATmega328P</b>
Option B:	ATmega327P
Option C:	ATmega329P
Option D:	ATmega326P

### Descriptive Questions

<b>10 marks each</b>
Justify the need of OT and IT convergence and elaborate the challenges associated with it.
Describe the hierarchy of Cloud computing, Edge computing and Fog Computing
Explain IoTWF standardised architecture with diagram
Explain concept and working of RFID System
Describe Smart Object and its characteristics
Describe MEMS and its application
Discuss the framework of Zigbee and its application
Elaborate the working of Layer 1 of Core IoT Functional Stack
Elaborate Tunneling Legacy SCADA over IP Networks with three scenarios
Describe the SCADA Transport over LLNs with MAP-T
Elaborate the working model of smart weather monitoring system
Elaborate the working model of smart agriculture system
Compare Arduino Uno and Raspberry Pi 3 model in terms of connectivity and communication standards
Identify the IoT board / platform in terms development environment and communication standards for smart irrigations system and discuss the security concerns related to it.
Identify the most appropriate IoT board / platform in terms development environment and communication standards for smart home and discuss the security concerns related to it.
Identify the most appropriate IoT board / platform in terms of computing smart irrigations system and discuss the security concerns related to it.

<b>5 marks each</b>
Elaborate the driving force behind development of new architecture for IoT
Compare M2M and IoT frameworks
Discuss any one IoT Software platform and its working wrt an application
Define sensor and list types of sensors
Give different ways to categorized the sensors with one example for each
List differences between bluetooth and BLE
Explain working of Backhaul Sublayer in communication network layer

Explain the working principle and characteristics of actuators
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Describe the types of topologies used in sensor network
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Distinguish between Bluetooth and BLE
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Distinguish between Analytics and Control Applications of layer 3 IoT Functional stack
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Discuss the need of IoT Data Broker and its working
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Analyze the deployment requirements for smart irrigation system
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Analyze the deployment requirement for smart parking system.
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