KIIT Deemed to be University
Online Mid Semester Examination(Autumn Semester-2021)

Subject Name & Code: IoT IT-3007 **Applicable to Courses: IT/CSSE**

Full Marks=20 **Time:1 Hour**

SECTION-A(Answer All Questions. All questions carry 2 Marks)
Time:20 Minutes **(5×2=10 Marks)**

Question No	Question Type(MCQ/ SAT)	Question	Answer Key(if MCQ)	CO Mapping
Q.No:1(a)		Which of the following is/are NOT correct? A. Multiple nodes are only seen in case of IOT level 4, 5 and 6. B. Node or nodes used in IOT level 2 and 4 are almost same based on monitoring and analysis. C. clouds used in IOT level 3 and 5 are almost same based on storage and analysis. D. None of the above	D	1
		Which of the following is correct? A. Node, resource, controller service, database, web services are few components of IOT levels B. Device, resource, controller service, cloud storage, Analysis component are few components of IOT levels C. Device, resource, controller service, web services, Analysis component are few components of IOT levels D. Device, resource, cloud storage, web services, Analysis components, application are few components of IOT levels	C	1
		Which of the following is/are NOT correct? A. Node used in IOT level-1 is suitable for modeling low-cost, low-complexity, less analysis and less storage space. B. Node used in IOT level-3 has less potential in comparison to node used in level-1 and level-2 C. Nodes used in IOT level-6, all nodes are controlled by centralized controller. D. None of the above	D	1
		Which of the following is/are NOT correct? A. IOT level 1, 2 and 3 are single node	D	1

		based. B. IOT level 4, 5 and 6 are multi node based C. Observer nodes are only applicable to multi node based IOT levels D. Coordinator node is present in both IOT level 6 and 7.		
Q.No:1(b)		Which IoT communication model has a queue that acts as a buffer there? A. Request-response B. Publish-scbscribe C. Push-pull D. Exclusive pair	C	1
		"The client cannot tell whether it is connected directly to the end server, or to an intermediary along the way." This statement belongs to which constraint of REST? A. Client-server B. Stateless C. Cacheable D. Layer system	D	1
		Which statement is NOT true for Publish-Subscribe Communication model? A. Publisher send the data to the topics which are managed by the broker. B. Publisher push the data in to queues. C. Consumers subscribe to the topics which are managed by the broker. D. When brker receives data for a topic from the Publisher, it sends the data to all the subscribed consumers.	B	1
		Which statements are true for RESTFul API? S1: Each request from client to server must contain all the information necessary to understand the request, cannot take the advantage of any stored context on the server. S2: Client can retrieve the source state from an origin server or manipulate resource state on the origin server by transferring resource representations. S3: RESTFul API reduces the network traffic and latency as there is no overhead for connection setup and termination requests for each message. A. Both S1 and S2. B. Both S1 and S3. C. Both S2 and S3. D. All statements.	A	1
Q.No:1(c)		Which one is an open source automation platform for smart home and building that can control various appliances using mobile and web applications? A. OpenRemote B. Gaseous and meteorological sensors based technology C. OpenPDC	A	1

		D. Near field communication (NFC), RFID, and Bluetooth		
		Smart Appliances component not includes: A. Controller B. user interface designs C. Control Panel D. Navigation systems	D	1
		Prognostic real-time health management systems is used to: A. Detect the forest condition B. Predict performance of machines C. Measure the environmental health condition D. Monitor the critical infrastructure of the cities	B	1
		Name of the weather and air quality monitoring kit A. AirPi B. Cultivar's RainCould C. Case-based reasoning D. Ultrasonic and velocity kit	A	1
Q.No:1(d)		A machine in M2M has a 1. micro-controller which consists of 2. processor, 3. memory, 4. firmware, 5. timer, 6. interrupt controller, 7. communication module. A. Options 1 and 2 always present in M2M as well as IoT devices and remaining depends on the application. B. Option 1 and 7 always present in M2M as well as IoT devices and remaining depending on the application. C. Options 1 to 5 and 7 always present in M2M devices. D. All are required in an M2M or IoT device.	B	2
		Network domain in M2M consists of 1. M2M server, 2. M2M gateway, 3. Wired network, 4. Wireless network. A. All are true. B. All except options 2 are correct. C. Similar to IoT architecture (connect + collect + assemble + analyze) in conceptual framework. D. All except options 3 and 4 are true.	A	2
		Which below mentioned communication protocol is used in M2M technology: 1. 6LowPAN 2. LWM2M 3. MQTT 4. XMPP A. Options 1 and 3 are the communication	C	2

		protocols used. B. Options 1 , 3, 4 are the communication protocols used. C. Options 1 to 4 all of the above mentioned communication protocols are used. D. None of the above mentioned communication protocols are used.		
		Each communication device in M2M technology the IP addressing assigned is: A. 128 bit IPV6 address. B. 48 bit IPV6 address. C. 32 bit IPV4 address D. None of the above.	B	2
Q.No:1(e)		Which statement/s is/are true? I: Physical entity is the representation of virtual entity in real world II: Virtual entity is the representation of physical entity in digital world. III: For each physical entity, there will be a virtual entity in the domain model A. I and II B. I and III C. II and III D. All statements	C	3
		Which statement/s is/are true? I. Resources are hardware components . II. Resources are software components. III. Resources can available on network. A. I and II B. I and III C. II and III D. All statements	D	3
		Which statements are true? I. Service functional groups includes various services involved in IoT system such as communication services, device monitoring services, etc. II. Communication functional group includes communication protocols that form the backbone of IoT systems . III. Device functional group contains devices for monitoring and control. A. I and II B. I and III C. II and III D. All statements	C	3
		In case of IoT system for weather monitoring system, which statement is true? I. There are many virtual entities such as environment, sensors,etc. II. Services include controller service that	C	3

		monitors the temperature , pressure , humidity and light and sends data to local system. III. The analysis of data is done in the cloud to aggregate the data and make predication. A. Only I B. Only II C. Only III D. None of the above		

SECTION-B(Answer Any One Question. Each Question carries 10 Marks)

Time: 30 Minutes **(1×10=10 Marks)**

Question No	Question	CO Mapping
Q.No:2	Comparative analysis among all six IoT levels based on particularly: node potential/number of nodes and cloud potential.	1
Q.No:3	Let we want to design one IoT system for smart irrigation. What are the communication protocols used in smart irrigation according to the IoT protocol layer? Explain each protocols.	1
Q.No:4	What are the benefits of an IoT oriented approach in smart healthcare system? Compare the scenario of smart healthcare system with and without IoT approach.	2
Q.No:5	Draw the M2M architecture and explain the components in detail. Mention some of the applications of M2M technology. Briefly explain a view of an M2M application for a car traffic report, control and monitoring.	2
Q.No:6	During this pandemic period, everyone is worried about their health. Define a problem statement for developing a health care system which gives alert about Blood Pressure , Body Temperature and Oxygen level of a patient if his/her oxygen saturation level below 96 SPF and also write purpose and requirements. Design process model specification, domain model specification and information model for the above mention healthcare system.	3

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