Total No. of Questions: 6 *Total No. of Printed Pages:2*

Enrollment No.....

Faculty of Engineering
End Sem Examination May-2023
OE00069 IoT with Applications

Programme: B.Tech. Branch/Specialisation: All

Duration: 3 Hrs. **Maximum Marks: 60**

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d. Assume suitable data if necessary. Notations and symbols have their usual meaning.

Q.1 i. What is IoT? **1**
(a) Network of physical objects embedded with sensors
(b) Network of virtual objects
(c) Network of objects in the ring structure
(d) Network of sensors

ii. Which of the following is not a fundamental component of an IoT system? **1**
(a) Sensors (b) Connectivity and data processing
(c) User interface (d) Transformer

iii. Which of the following is used to capture data from the physical world in IoT devices? **1**
(a) Sensors (b) Actuators
(c) Microprocessors (d) Microcontrollers

iv. _____ Services are the way in which the IoT is connected to data. **1**
(a) Cloud (b) Bigdata (c) Internet (d) Network

v. Which of the following is not related to Arduino IDE IoT software? **1**
(a) Serial monitor (b) Verify
(c) Upload (d) Terminate

vi. IoT gateway must provide _____. **1**
(a) Protocol abstraction (b) Data storage
(c) Security with hardware (d) Simple and fast installation

vii. Even with two-factor authentication, users may still be vulnerable to _____attacks. **1**
(a) Scripting (b) Cross attack
(c) Man-in-the-middle (d) Radiant

P.T.O.

viii. Process of keeping track of users' activity - **1**
(a) Authentication (b) Authoring
(c) Authorisation (d) Accounting

ix. Which of the following is the instrument for measuring humidity within environment? **1**
(a) Humidity Sensor (b) Hygrometer
(c) Both (a) and (b) (d) Gyrometer

x. Which type of sensor is used to measure the distance between the vehicle and other objects in its environment: **1**
(a) Ultrasonic sensor (b) Tactile sensor
(c) Motion sensor (d) None of these

Q.2 i. Define IoT? Explain its different characteristics. **4**
ii. Explain physical and logical design of IoT. **6**
OR iii. Explain communication model and API's of IoT. **6**

Q.3 i. Differentiate between M2M and IoT **4**
ii. How data stored in IoT? Devices and explain use of cloud-based services by IoT. **6**
OR iii. What is NFV? How will it work and different from SDN? **6**

Q.4 i. Describe process and domain specification for IoT design methodology. **4**
ii. Explain different levels of IoT. **6**
OR iii. Explain in detail about functional and operational view. **6**

Q.5 i. What are the functional components of security? **4**
ii. What are the examples of security issues for which use cases are required in IoT? **6**
OR iii. Explain layered attacker model and attacks possible on those layers. **6**

Q.6 i. How smart lighting useful for home automation? **4**
ii. How IoT can be used to make smart cities? Give any two examples with explanation. **6**
OR iii. Explain following application areas of IoT: **6**
(a) Air Pollution Monitoring (b) Forest Fire Detection

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Marking Scheme

OE00069_IoT with Applications

Q.1	i)	What is IoT? a) network of physical objects embedded with sensors	**1**
	ii)	Which of the following is not a fundamental component of an IoT system? d) Transformer	**1**
	iii)	Which of the following is used to capture data from the physical world in IoT devices? a) Sensors	**1**
	iv)	_____ Services are the way in which the IoT is connected to data. a) Cloud	**1**
	v)	Which of the following is not related to Arduino IDE IoT software? d) Terminate	**1**
	vi)	IoT gateway must provide _____ a) Protocol abstraction	**1**
	vii)	Even with two-factor authentication, users may still be vulnerable to _____attacks. c) Man-in-the-middle	**1**
	viii)	Process of keeping track of users' activity - d) Accounting	**1**
	ix)	Which of the following is the instrument for measuring humidity within environment? d) Both a and b	**1**
	x)	Which type of sensor is used to measure the distance between the vehicle and other objects in its environment: a) Ultrasonic sensor	**1**
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	ii.	How IoT can be used to make smart cities? 2 Give any two examples with explanation. 4	**6**
	iii.	Explain following application areas of IoT: 1) Air Pollution Monitoring 3 2) Forest Fire Detection 3	**6**

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