Total No. of Questions: 6 *Total No. of Printed Pages:3*

Enrollment No.....

Faculty of Engineering

End Sem Examination Dec-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 false about IoT devices? **1**

(a) IoT devices use the internet for collecting and sharing data
(b) IoT devices need microcontrollers
(c) IoT devices use wireless technology
(d) IoT devices are completely safe

iii. What is the full form of M2M? **1**

(a) Machine-to Machine (b) Machine-to Man
(c) Model-to Machine (d) Memory-to-Machine

iv. What is the role of Cloud in smart grid architecture of IoT? **1**

(a) Security (b) Collect data
(c) Manage data (d) Store data

v. Which possibility ensures load balancing and peak levelling of energy consumption? **1**

(a) Transportation and logistics
(b) Energy and utilities
(c) Automotive
(d) Connected supply chain

vi. BoT stands for _____. **1**

(a) Bank of Things (b) Built of Things
(c) Benefits of Things (d) Business of Things

P.T.O.

vii. What is an attack which forces an end user to execute unwanted actions on a web application in which he/she is currently authenticated? **1**
(a) Cross-site scoring scripting (b) Cross-site request forgery
(c) Two-factor authentication (d) Cross-site scripting

viii. Which of the following is not the component of IoT Endpoint? **1**
(a) Sensor (b) Gateway
(c) Communication module (d) MCU

ix. Which of the following allows to monitor the application? **1**
(a) Endpoints (b) Hypermedia (c) Boot (d) Actuators

x. Identify the challenge coming under securing the information- **1**
(a) Presence detection (b) Power consumption
(c) Security (d) Signaling

Q.2 i. Explain simplified IoT architecture. **4**
ii. What is the function of various functional units in microcontroller that embed in an IoT device? **6**
OR iii. List the device platform communication protocols, network communication protocol and network backbone protocol which IoT can use. **6**

Q.3 i. What does M2M mean? How does M2M relate to IoT? **3**
ii. Explain software define network and network function virtualization with example. **7**
OR iii. What is the various cloud-based service of IoT? Explain data storage complexities in IoT. **7**

Q.4 i. What do you mean by functional view and operational view? **4**
ii. What issues might affect the development and implementation of IoT? **6**
OR iii. Explain domain model and information model in detail. **6**

Q.5 Attempt any two:
i. How do you define message privacy? List the different vulnerabilities for attack. **5**
ii. Write the usage of five function components in the security group of functions. **5**
iii. Why does security tomography enable fast detection in case of complex set of subsystem or networks? **5**

Q.6 i. How IoT can be used in the field of agriculture? Explain with an example. **4**
ii. What are the various application areas of IoT? **6**
OR iii. Draw the architecture of Arduino. Write some area where Arduino device used. **6**

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Marking Scheme
OE000069_IoT with Applications

Q.1	i)	a) Network of physical objects embedded with sensors		**1**
	ii)	d) IoT devices are completely safe		**1**
	iii)	a) Machine-to Machine		**1**
	iv)	c) Manage data		**1**
	v)	b) Energy and utilities		**1**
	vi)	a) Bank of Things		**1**
	vii)	b) Cross-site request forgery		**1**
	viii)	b) Gateway		**1**
	ix)	a) endpoints		**1**
	x)	a) Presence detection		**1**
Q.2	i.	Simplified IoT architecture.	As per explanation)	**4**
	ii.	Function …. ….. IoT device	(2 Marks*3)	**6**
OR	iii.	platform communication protocols network communication protocol Network backbone protocol.	2 Marks 2 Marks 2 Marks	**6**
Q.3	i.	M2M mean M2M relate to IoT	1 Marks 2 Marks	**3**
	ii.	Software define network Network …….example.	3.5 Marks 3.5 Marks	**7**
OR	iii.	Cloud-based service of IoT Data storage complexities in IoT.	3.5 Marks 3.5 Marks	**7**
Q.4	i.	Functional view. Operational view.	2 Marks 2 Marks	**4**
	ii.	Affect …….. of IoT	(2 Marks *3)	**6**
OR	iii.	Domain model. Information model.	3 Marks 3 Marks	**6**
Q.5	i.	Define message privacy List the different vulnerabilities for attack.	2.5 Marks 2.5 Marks	**5**
	ii.	Five function components.	(1 Marks *5)	**5**
OR	iii.	Tomography ….. networks	(As per explanation)	**5**
Q.6	i.	Explain with an example.	(As per explanation)	**4**
	ii.	Application areas of IoT	(1 Marks *6)	**6**
	iii.	Draw the architecture of Arduino. Arduino device used.	3 Marks 3 Marks	**6**

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