Q.6		Write short notes on any two:							
	i.	Wireless Sensor Network Technology (WSTN).	**5**	02	01 02	03	01 02		
	ii.	Smart lighting and smart parking in context of IoT.	**5**	03	01 02	04	01		
	iii.	Sensor and Actuator.	**5**	02	01 02 12	02	01		

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Total No. of Questions: 6 *Total No. of Printed Pages:4*

Enrollment No.....

Faculty of Engineering
End Sem Examination Dec 2024
EE3EI03 IOT Applications in Electrical Engineering

Programme: B.Tech. Branch/Specialisation: EE

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.

			Marks	**BL**	**PO**	**CO**	**PSO**
Q.1	i.	The things in IoT must have a/an- (a) Password (b) IP address (c) Identification mark (d) None of these	**1**	01	01 02	01	01
	ii.	The function of Gateway in IoT is- (a) To Store the data (b) Protocol conversion (c) To analyze the data (d) None of these	**1**	01	01 02	01	01
	iii.	Which of the following International organization/ company has modified the OSI model of IoT? (a) ITU-T (b) IETF (c) ORACLE (d) CISCO	**1**	01	01 02	01	01
	iv.	The communication network in M2M can be used _____. (a) Wireless medium (b) Wired medium (c) Both (a) and (b) (d) None of these	**1**	01	01 02	01	01
	v.	The full form of LWM2M is- (a) Large Weight Machine to Machine (b) Low Weight Machine to Machine (c) Light Weight Machine to Machine (d) Lost Weight Machine to Machine	**1**	01	01 02	01	01

vi.	How many bytes of web object can be sent using HTTP protocols? (a) 10 (b) 100 (c) 1000 (d) 10000	**1**	01	01 02	01	01
vii.	For data generation, which of the following device has an associated microcontroller, memory and transceiver? (a) Passive device (b) Active device (c) Both (a) & (b) (d) None of these	**1**	01	01 02	01	01
viii.	IoT and cloud computing has _____ relationship. (a) Physically (b) Graphically (c) Complementary (d) Coding	**1**	01	01 02	01	01
ix.	RFID stands for _____. (a) Raspberry Pi Identification (b) Radio Frequency Identification (c) Radius Frequency Identification (d) Radio Flexible Information	**1**	01	01 02	01	01
x.	Which of the following is not an application of IoT? (a) Smart city (b) Environment Monitoring (c) Smart Home (d) Arduino	**1**	01	01 02	01	01

Q.2	i.	Define the followings: (a) Internet (b) Things (c) Internet of Things (IoT)	**2**	01	01 02	01	01
	ii.	Explain about the IoT conceptual framework provided by Oracle and IBM.	**3**	02	01 02 12	02	01
	iii.	Describe the device domain, network domain and application domain of Machine to Machine (M2M) communication architecture model.	**5**	02	01 02 12	02	01
OR	iv.	With the help of block diagram, explain the function of each component of microcontroller.	**5**	02	01 02 12	02	01

Q.3	i.	Define the followings: (a) Data consolidation (b) Data enrichment	**2**	01	01 02	01	01
	ii.	Describe the following models for the IoT system: (a) Modified OSI model (b) ITU-T Reference Model	**8**	02	01 02 12	02	01
OR	iii.	Write down the features of the following wireless communication technologies: (a) Near Field Communication (b) Bluetooth BR/EDR and Bluetooth low energy	**8**	02	01 02	03	01 02

Q.4	i.	What are the constraints of Constraint RESTFUL Environment (CORE)?	**3**	01	01 02	01	01
	ii.	Draw the communication model of Constraint RESTFUL Environment and list out the features of Constraint Application Protocol (CoAP).	**7**	03	01 02	04	01
OR	iii.	Define the following terms related to message communication protocol. (a) Message cache (b) Message queue (c) Polling (d) Resource discovery (e) Resource directory (f) Request/response (g) Publish/subscribe	**7**	01	01 02	01	01

Q.5	i.	What are the different types of data that can be generated using active device? Define each type of data with an example.	**4**	01	01 02	01	01
	ii.	What is IoT data analytics? Describe the different methods of data analysis.	**6**	02	01 02 12	02	01
OR	iii.	What is the significance of cloud service in IoT? Explain the various features of Nimbits cloud platform.	**6**	02	01 02	03	01 02

P.T.O.

Marking Scheme

EE3EI03 (T) IOT Applications in Electrical Engineering (T)

Q.1	i)	(b) IP address	**1**
	ii)	(b) Protocol conversion	**1**
	iii)	(b) IETF	**1**
	iv)	(c) Both	**1**
	v)	(c) Light Weight Machine to Machine	**1**
	vi)	(c) 1000	**1**
	vii)	(c) Both (a) & (b)	**1**
	viii)	(c) Complementary	**1**
	ix)	(b) Radio Frequency Identification	**1**
	x)	(d) Arduino	**1**

Q.2	i.	Internet & things definition each 0.5 mark, IoT definition- 1 Mark	**2**
	ii.	Oracle framework- 1.5 Mark, IBM framework- 1.5 Mark	**3**
	iii.	Device domain- 2marks, Network domain- 1 Mark, Application domain- 1 Mark	**5**
OR	iv.	Block diagram- 2 Marks, functions explanation of component- 3 Marks	**5**
Q.3	i.	Each definition 1 Mark	**2**
	ii.	Modified OSI model- 4 marks, ITU-T reference model- 4 Marks	**8**
OR	iii.	NFC features- 4marks, Bluetooth features- 4 Marks	**8**
Q.4	i.	3 constraints- 3 Marks	**3**
	ii.	Communication model- 3marks, Features of CoAP- 4 Marks	**7**
OR	iii.	Each definition- 1 Mark	**7**
Q.5	i.	Different types of data name- 1 mark, definition with example- 3 Marks	**4**
	ii.	Definition- 1mark, Types of method-1mark, Description- 4 Marks	**6**
OR	iii.	Significance- 2marks, Features of Nimbits- 4 Marks	**6**
Q.6			
	i.	WSTN description- 5marks	**5**
	ii.	Smart lighting- 2.5 marks, Smart parking- 2.5 Marks	**5**
	iii.	Sensor- 2.5 marks, Actuator- 2.5 Marks	**5**

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