Q. Code:860333

Reg. No. | | | | | | | | | | | | | |

B.E. / B.TECH. DEGREE EXAMINATIONS, MAY 2024

Fifth Semester

EC18005 – INDUSTRIAL INTERNET OF THINGS

(Electronics and Communication Engineering)

(Regulation 2018 /2018A)

TIME: 3 HOURS **MAX. MARKS: 100**

COURSE OUTCOMES	STATEMENT	RBT LEVEL
CO 1	Distinguish between IOT and Industrial IOT and interrelate the role of key components in various applications.	**4**
CO 2	Categorize the reference architectures and protocols for IOT & IIOT.	**4**
CO 3	Identify the different sensors and actuators that are used in IIOT.	**4**
CO 4	Interrelate the Commercially available IIOT Cloud Platforms and detect vulnerabilities with respect to security in IOT.	**4**
CO 5	Distinguish between various Data analytics models and visualization tools and relate to real life examples of IIOT.	**4**

PART- A (10 x 2 = 20 Marks)

(Answer all Questions)

		CO	RBT LEVEL
1.	Compare and contrast web socket-based vs. REST-based APIs.	**1**	**4**
2.	Point out the challenges faced by the Internet of Things.	**1**	**2**
3.	Distinguish between functional and usage viewpoints in the IIRA framework.	**2**	**4**
4.	Categorize the business models in IIOT.	**2**	**2**
5.	Illustrate the sensing unit in the milk packaging industry.	**3**	**3**
6.	Identify suitable applications of the BACNET protocol.	**3**	**2**
7.	Identify the vulnerabilities in IOT applications.	**4**	**2**
8.	What are the attack surface areas in Device Web Interface (DWI) and Cloud Web Interface (CWI) defined in OWASP?	**4**	**1**
9.	Conclude an IOT strategy for smarter cities.	**5**	**5**
10.	Infer how IOT data is securely connected, managed, and analysed?	**5**	**4**

PART- B (5 x 14 = 70 Marks)

		Marks	CO	RBT LEVEL
11. (a)	Examine how WSN, cloud computing, and big data analytics function as important IOT enabling technologies.	**(14)**	**1**	**3**
	(OR)			
(b)	Examine the challenges and benefits of implementing IIOT in manufacturing processes.	**(14)**	**1**	**3**

12. (a)	Demonstrate the simplified IOT architecture and core IOT functional stack with neat diagram.	**(14)**	**2**	**3**
	(OR)			
(b)	Analyze in detail the IOT application protocol and their characteristics with suitable illustration.	**(14)**	**2**	**3**
13. (a)	Examine the special requirements for IIOT sensors. Categorize the sensors and explain types of IIOT sensors with appropriate diagrams.	**(14)**	**3**	**4**
	(OR)			
(b)	Enumerate the most significant features, and describe the components of the HART protocol and Modbus that are widely used in industrial data transmission.	**(14)**	**3**	**4**
14. (a)	Examine the challenges in cyber security, cyber threats and standards in the context of IIOT.	**(14)**	**4**	**3**
	(OR)			
(b)	Explain the Identity management for establishing identities of device and application/services with examples.	**(14)**	**4**	**3**
15. (a)	Analyze the IOT platform designed for business, and infer how IOT data are securely connected, managed and analyzed.	**(14)**	**5**	**4**
	(OR)			
(b)	Analyze in detail about data analytics in IOT and the role of machine learning with suitable illustration.	**(14)**	**5**	**4**

PART- C (1 x 10 = 10 Marks)

(Q.No.16 is compulsory)

		Marks	CO	RBT LEVEL
16.	Prepare an IOT strategy for smart city and design the layered architecture for implementing smart cities.	**(10)**	**5**	**5**

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