Basavarajeswari Group of Institutions
BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT
(Autonomous Institute under Visvesvaraya Technological University, Belagavi)

USN ☐☐☐☐☐☐☐☐☐☐   **Course Code** | 2 | 1 | E | C | 6 | 5 | 1 |

Sixth Semester B.E. Degree Examinations, September/October 2024
INTERNET OF THINGS

Duration: 3 hrs   **Max. Marks: 100**

*Note: 1. Answer any **FIVE** full questions choosing ONE full Question from each Module.*
2. Missing data, if any, may be suitably assumed

Q. No		Question	Marks	(RBTL:CO:PI)
		MODULE – 1		
1.	a	Describe the IoT 5 layer framework with help of neat diagram.	07	(2:1:1.6.1)
	b	Explain the role of security layer in building the enterprise things.	05	(2:1:1.6.1)
	c	Discuss the product technology stack of the PTC's IoT framework.	08	(2:1:1.6.1)
		(OR)		
2.	a	Describe the structure of the GE's IoT framework for build machines use case.	08	(2:1:1.6.1)
	b	Outline on the presence of things in the locomotives use case.	06	(2:1:1.6.1)
	c	Summarize on the things-in-practice considering construction equipments.	06	(2:1:1.6.1)
		MODULE – 2		
3.	a	Explain in brief the use of LoRaWAN connect technology for connecting the things.	07	(2:2:1.6.1)
	b	Summarize on the collect principles in collecting the data from the electric power use case.	06	(2:2:1.6.1)
	c	Explain in brief on the Hadoop framework in storing and processing heterogeneous data.	07	(2:2:1.6.1)
		(OR)		
4.	a	Summarize on the need for a firewall-based connection security deployment on oil and gas platform.	08	(2:2:1.6.1)
	b	Describe the role of cloud computing in implementing IoT solutions.	07	(2:2:1.6.1)
	c	Compare Sql and NoSql approaches as the IoT data storage solutions.	05	(2:2:1.6.1)
		MODULE – 3		
5.	a	Illustrate the novelty detection technique applied in the AI Model to detect if Jet-engines operating abnormally.	07	(2:3:1.6.1)
	b	Investigate how the learn layer of the IoT framework helps in improving the operating performance and predictive maintenance of the offshore oil and gas rigs.	06	(2:3:1.6.1)
	c	Explain the CRISP (Data Mining) lifecycle in the context of machine learning.	07	(2:3:1.6.1)
		(OR)		

Note: (RBTL - Revised Bloom's Taxonomy Level: CO - Course Outcome: PI– Performance Indicator)

6.	a	Summarize with an example the difference between machine data and nomic data.	06	(2:3:1.6.1)
	b	Discuss in brief the factors that govern the next generation middleware.	07	(2:3:1.6.1)
	c	Outline on the machine business models in the arena of precision machines.	07	(2:3:1.6.1)

MODULE – 4

7.	a	Illustrate how things are connected in the Pitney Bowes Inserter (Mailing Machine).	07	(2:4:1.6.1)
	b	Illustrate how the learn layer of the IoT framework helps in improving the operating performance and predictive maintenance of the Pitney Bowes Inserter (Mailing Machine).	07	(2:4:1.6.1)
	c	Investigate how the Do layer of the IoT framework enables AGCO agricultural machinery manufacturer to offer its dealer channel to provide higher levels of service.	06	(2:4:1.6.1)

(OR)

8.	a	Describe any six parameters being measured using things that are present on typical precision mining machine.	06	(2:4:1.6.1)
	b	Illustrate how the learn layer of the IoT framework in precision mining helps in early identification and warning of potential catastrophic failures.	07	(2:4:1.6.1)
	c	Investigate how the Learn layer of the IoT framework in precision agriculture helps both dealers and operators of the agriculture machines use the collected sensor data.	07	(2:4:1.6.1)

MODULE – 5

9.	a	Illustrate how the things layer of the IoT framework allows Sensium vitals to continuously monitor the vital signs of patients in all areas of the hospital setting.	07	(2:5:1.6.1)
	b	Illustrate how the learn layer of the IoT framework facilitates to build a decision tree surrounding the PMU measurements.	06	(2:5:1.6.1)
	c	Investigate the precision water connection architecture to connect the things locally and for the remote locations.	07	(2:5:1.6.1)

(OR)

10.	a	Investigate how the learn layer of the IoT framework permits precision water technology to identify a malfunctioning irrigation system.	07	(2:5:1.6.1)
	b	Investigate the high-level SAM car architecture employed in a precision race car.	07	(2:5:1.6.1)
	c	Illustrate how the connect layer of the IoT framework connects the things inside a precision race car.	06	(2:5:1.6.1)

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Note: (RBTL - Revised Bloom's Taxonomy Level: CO - Course Outcome: PI– Performance Indicator)