

BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT

(Autonomous Institute under Visvesvaraya Technological University, Belagavi)

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Course Code

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Seventh Semester B.E. Degree Examinations, February 2025

A PRACTICAL APPROACH TO IoT

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

<u>Q. No</u>	<u>Question</u>	<u>Marks</u>	<u>(RBTL:CO:PI)</u>
<u>Module-1</u>			
1.	a. Define IOT. Explain the architecture of IOT with a neat diagram.	10	(2 : 1 : 1.3.1)
	b. List and explain IOT networking components.	10	(2 : 1 : 1.3.1)
(OR)			
2.	a. Describe the characteristics of actuators.	10	(2 : 1 : 1.3.1)
	b. Explain in detail structured and unstructured data.	10	(2 : 1 : 1.3.1)
<u>Module-2</u>			
3.	a. Describe the key features of Arduino, Raspberry Pi, and ESP8266 IOT hardware platforms.	10	(2 : 2 : 1.3.1)
	b. Explain the critical factors to be considered while selecting IOT hardware.	10	(2 : 2 : 1.3.1)
(OR)			
4.	a. Describe the key components of signal conditioning and its importance in IOT.	10	(2 : 3 : 1.3.1)
	b. Explain the process of data acquisition in IOT.	10	(2 : 3 : 1.3.1)
<u>Module-3</u>			
5.	a. With a neat sketch, explain the ZigBee protocol stack.	10	(2 : 4 : 1.3.1)
	b. Describe in detail the COAP protocol.	10	(2 : 4 : 1.3.1)
(OR)			
6.	a. Explain briefly IOT communication models.	10	(2 : 4 : 1.3.1)
	b. Describe the MQTT quality of service with a clear diagram.	10	(2 : 4 : 1.3.1)
<u>Module-4</u>			
7.	a. Explain the different components of agricultural IOT with a neat diagram.	10	(2:5 : 1.3.1)
	b. Elaborate the applications, benefits and challenges of smart homes.	10	(2:5 : 12.2.2)
(OR)			

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| 8. | a. | Explain the four-layered architecture of a smart city IOT infrastructure. | 10 | (2:5 : 1.3.1) |
| | b. | Explain key components and benefits of remote monitoring in health care IOT. | 10 | (2:5 : 1.3.1) |

Module-5

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| 9. | a. | Explain the terms Internet of battlefield things, Internet of vehicles, and Internet of underwater things. | 10 | (2:5 : 1.3.1) |
| | b. | Explain in detail the challenges associated with the Internet of Things. | 10 | (2:5 : 12.2.2) |

(OR)

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|-----|----|--|----|----------------|
| 10. | a. | Explain the emerging pillars of IOT. | 10 | (2:5 : 12.2.1) |
| | b. | Describe in detail the societal impact of IOT. | 10 | (2:5 : 3.1.5) |

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