Duration: 3 Hours **Maximum Marks: 80**

N.B.:
1. Question No.1 is compulsory.
2. Out of the remaining five questions attempt any three questions.
3. Assume suitable data if required and state it clearly.
4. Figures in brackets to the right indicate full marks.

1		Attempt **any FOUR**	**(20)**
	a	Difference between IoT and M2M	**(5)**
	b	Explain Web connectivity using Gateway	**(5)**
	c	Explain the key components of Hadoop MapReduce and how they contribute to batch data analysis.	**(5)**
	d	Explain Cyber Physical Systems.	**(5)**
	e	What is role of Inventory Management and Quality Control in Industrial IoT (IIoT)	**(5)**
2	a	Explain COAP and MQTT architectures and differentiate between them	**(10)**
	b	Explain the architecture of Apache Storm and how it facilitates real-time data analysis.	**(10)**
3	a	Describe the LoRa modulation scheme and its advantages for long-range communication in IoT applications. How does LoRaWAN enable efficient deployment of LoRa networks?	**(10)**
	b	Explain the concept of the "Smart Factory" within the context of Industry 4.0. How does it leverage interconnected systems and real-time data to enable flexible, autonomous production?	**(10)**
4	a	Explain with example Augmented Reality and Virtual Reality.	**(10)**
	b	State and explain Challenges and Solutions Internet of Things for Industry 4.0.	**(10)**
5	a	State and explain Examples for IoTs Value Creation in Different Industries.	**(10)**
	b	Explain how plant safety and security is done in Industrial IoT	**(10)**
6		Attempt **any Two**	
		Write a short note on	
	a	Draw and Explain LORA, NBIoT,	**(10)**
	b	Human Machine Interaction	**(10)**
	c	List and explain in details IoTs Value Creation Barriers.	**(10)**