Roll No.												

PRESIDENCY UNIVERSITY

BENGALURU

End - Term Examinations – December 2025

Date: 16 – 12- 2025 **Time:** 01:00pm – 04:00pm

School: SOE	**Program:** B.Tech	
Course Code : ECE3086	**Course Name :** Industrial Internet of Things	
Semester: VII	**Max Marks**: 100	**Weightage**: 50%

CO - Levels	**CO1**	**CO2**	**CO3**	**CO4**	**CO5**
Marks	18	18	20	22	22

Instructions:

(i) Read all questions carefully and answer accordingly.

(ii) Do not write anything on the question paper other than roll number.

Part A

Answer ALL the Questions. Each question carries 2marks. **10Q x 2M=20M**

1	Tally in part two characteristics that set IIoT apart from IoT.	**2 Marks**	**L2**	**CO1**
2	Describe the concept of an IoT "smart city" in brief.	**2 Marks**	**L2**	**CO1**
3	Describe briefly. on the Industrial Internet concept, including its application domain and protocols.	**2 Marks**	**L2**	**CO1**
4	Explain the idea of Cyber Physical System within the context of the Internet of Things (IoT).	**2 Marks**	**L2**	**CO1**
5	Enumerate the four fundamental structures of IIoT implementation.	**2 Marks**	**L2**	**CO2**
6	Elucidate the advantages of industrial automation in modern production facilities and workshops.	**2 Marks**	**L2**	**CO2**
7	Analyze the distinctions between Operational Technology (OT) and Information Technology (IT) within the context of the Industrial Internet of Things (IIoT).	**2 Marks**	**L3**	**CO2**

8	List at least six benefits of industrial automation in contemporary manufacturing.	2 Marks	L3	CO2
9	Name the three types of services that the cloud of things recommends.	2 Marks	L4	CO4
10	Evaluate the advantages of employing AR/VR in industrial safety.	2 Marks	L4	CO5

Part B

Answer the Questions **Total 80 Marks**

11.	a.	What are factories that are connected? Give an explanation of how networked factories will affect the industries of the future.	5 Marks	L2	CO1
	b.	Elucidate the notion of future smart factories within the Internet of Things (IoT) framework.	5 Marks	L2	CO1

or

12.	a.	Describe the idea of the future factories. What are the different parts required to put the future factories into operation?	5 Marks	L2	CO1
	b.	Give a brief overview of the Industry 4.0 strategies that must be used for the IIoT.	5 Marks	L2	CO1

13.	a.	Sketch the ITU's generic IIoT reference model, making sure to include the vertical and horizontal layers.	5 Marks	L2	CO2
	b.	In the ITU model, list the universal architecture requirements for the Internet of Things applications.	5 Marks	L3	CO2

or

14.	a.	Illustrate by a drawing the IIoT reference model proposed by IIC, clearly showing the vertical and horizontal layers.	5 Marks	L2	CO2
	b.	Discuss on the Industrial Internet Consortium (IIC) technique of IIoT architecture implementation.	5 Marks	L3	CO2

15.		Discuss how the ITU model of IIoT differs from the IIC reference design. List the IIoT's uses and implementation issues in upcoming factories and industries.	10 Marks	L3	CO3

Or

16.		Draw the Cyber Physical System's block design, making sure to clearly show what the sensors and actuators do.	**10 Marks**	**L3**	**CO3**

17.		Describe the industrial automation concept needed for industry 4.0 applications using an appropriate diagram. Draw a PLC system's basic block diagram, highlighting the unidirectional and bidirectional busses.	**10 Marks**	**L3**	**CO3**

Or

18.		Enumerate in-depth about the uses and difficulties of IIoT in the construction of industries of the future.	**10 Marks**	**L3**	**CO3**

19.		Examine the distinctions between augmented reality and virtual reality in the context of future manufacturing facilities. Elucidate the functions of augmented reality (AR) and virtual reality (VR) within the manufacturing and construction sectors.	**20 Marks**	**L3**	**CO4**

Or

20.		Outline the advantages of augmented and virtual reality in industrial automation. Elucidate the functions of augmented reality (AR) and virtual reality (VR) within the oil and gas sectors.	**20 Marks**	**L3**	**CO4**

21.	**a.**	Discuss the particular sensors employed in IIoT applications inside thermal power plants.	**10 Marks**	**L4**	**CO5**
	b.	Elaborate on the installations and applications of the Industrial Internet of Things (IIoT) within the healthcare sector.	**10 Marks**	**L4**	**CO5**

Or

22.	**a.**	Investigate in detail the components and uses of data analytics in IIoT.	**10 Marks**	**L4**	**CO5**
	b.	Distinguish between cloud and edge computing with regard to IIoT implementation.	**10 Marks**	**L4**	**CO5**

***** BEST WISHES *****