2 marks →

Q1. Define IIoT

IIoT stands of Industrial Internet of Things.

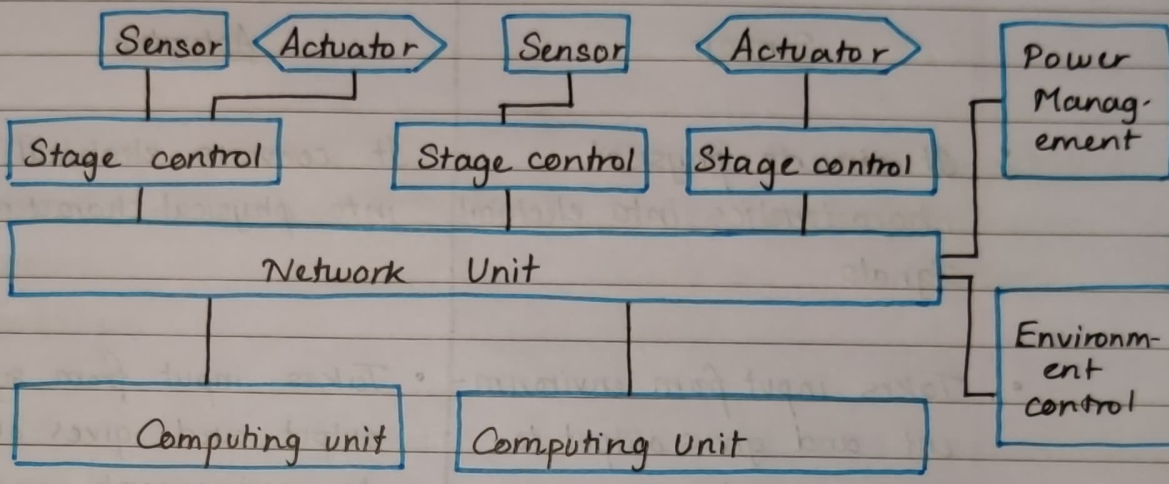
IIoT is the use of those connected technologies to enhance manufacturing and industrial processes

It utilises software, sensors, data systems and more in manufacturing to improve speed, efficiency and business performance.

Q2. Compare AR and VR

AR	VR
• Augmented reality is a mix of the real world and virtual world.	• Virtual reality creates an entire virtual world.
• It lets people interact with both worlds and distinguish clearly between both.	• In this case it is hard to distinguish between what is real and what is not real
• generally achieved by holding a smartphone in front of you.	• This is generally achieved by wearing a helmet or goggles.

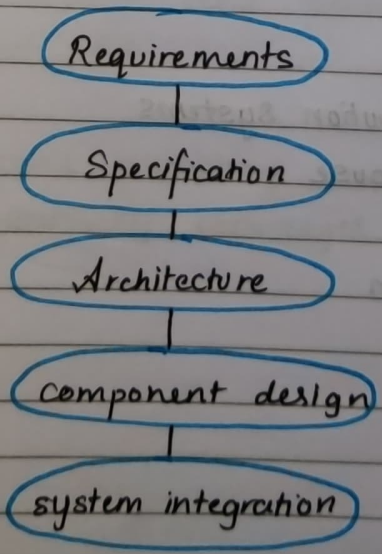
Q3. Sketch CPS architecture



Q4. Abstraction levels in embedded systems

A level of abstraction is usually understood in terms of the language of design. Usually the language defines the level. A level of abstraction is determined by the objects that can be accessed and the operations that can be performed on them.

Levels of abstraction in embedded system -



Q5. Difference between Sensors and Actuators

Sensor	Actuator
• It converts physical characteristics into electrical signals.	• It converts electrical signals into physical characteristics
• Takes input from environment and gives output to system input	• Takes input from system output and gives output to environment
• It is placed at the input port of the system	• It is placed at the output port of the system
• Generate electrical signals	• Generates heat or motion.

Q6. Applications of CPS

The applications of CPS include-

- Manufacturing
- Water distribution systems
- Smart Greenhouse
- Healthcare
- Transportation
- Buildings
- Claytronics

Q7. Difference between CPS and IoT

CPS	IoT
• The CPS system is to monitor and control physical processes in a seamless manner.	• IoT is to create a network of interconnected devices to collect and exchange data.
• CPS systems are more complex as compared to IoT devices	• IoT systems are relatively simple
• CPS uses sensors and actuators to work	• IoT is pure automation and does not need any external things

Q8. Collaborative platforms

A collaborative platform is a virtual workspace where resources and tools are centralized with the aim of facilitating communication and personal interaction in corporate project work.

This naturally means providing access to information, but also more importantly encourages collaboration in project.

Q9. Product Lifecycle Management

Product Lifecycle Management (PLM) represents an all encompassing vision for managing all data relating to the design, production, support and ultimate disposal of manufactured goods.

Q10. Next generation Sensor

Next generation sensors include HMCS (Handheld Molecular Contaminant Screeners)

Its a user friendly portable spectrometer that measures your sample within minutes.

It is portable, user friendly and requires no sample preparation.