SATHYABAMA INSTITUTE OF SCIENCE AND TECHNOLOGY
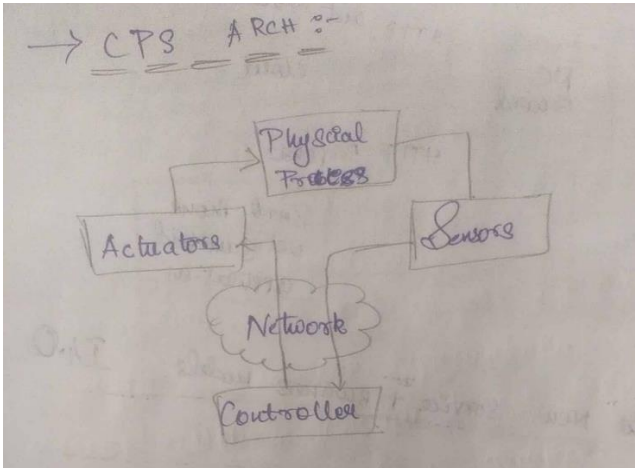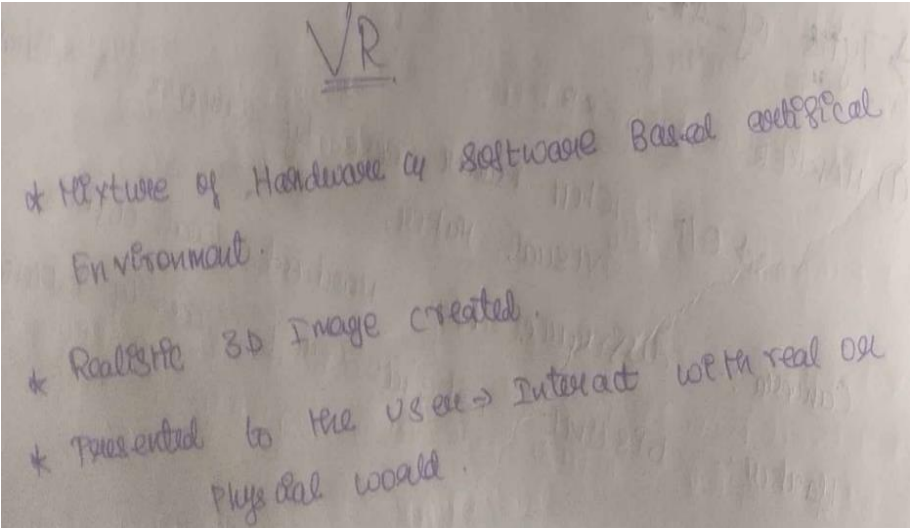
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

QUESTION BANK

SCSA1701CYBER PHYSICAL SYSTEMS

UNIT - I

S.No	PART-A	CO	Blooms Level
1	Define CPS and its components. A cyber-physical system (CPS) or intelligent system is a computer system in which a mechanism is controlled or monitored by computer-based algorithms Components: Computation, communication, Control	CO3	L1
2	Define IIoT. Conceptual model where use new tech which enable device to communicate with each other over internet.	CO3	L1
3	Why Industry Fourth Revolution. creates a world in which virtual and physical systems of manufacturing cooperate with each other in a flexible way at the global level	CO3	L1
4	List few Industry 4.0 technologies. Big Data & Analytics. Autonomous Robots. Simulation/Digital Twins, IOT, Cloud Computing	CO3	L3
5	Sketch proposed CPS architecture.	CO3	L3

6	Classify IoT and IIoT	CO3	L2
7	What is AI. Artificial intelligence is the simulation of human intelligence processes by machines, especially computer systems	CO3	L1
8	List few sensors used in Industrial Automation Temperature Sensors. Pressure sensors. Level sensors. Infrared sensors.	CO3	L1
9	What is Smart Transformation in Business? adopting to digital technology that is slated to change the existing mechanisms of any department in the business. It is all about how it can affect the employees and the customers in a positive way	CO3	L1
10	Compare AR and VR VR * Mixture of Hardware & Software Based artificial Environment. * Realistic 3D Image created. * Presented to the user → Interact with real or physical world.	CO3	L1

→ Augment Reality :-

* Enhanced version of reality.
* Direct / Indirect views of physical world are augmented with computer computer generated super imposed images.
* adds digital element to actual.
* Amplifies present perception of Reality.

11	Define CPS and its components. A cyber-physical system (CPS) or intelligent system is a computer system in which a mechanism is controlled or monitored by computer-based algorithms Components: Computation, communication, Control	CO3	L3

S.No	PART- B	CO	Blooms Level
1	Describe Industrial Internet System.	CO3	L2
2	Discuss Industry 4.0.	CO3	L2
3	Explain basics of Industrial IoT.	CO3	L5
4	Write short notes on a) Collaborative Platform b) Analytics for Smart Business Transformation	CO3	L3
5	Write briefly about basic principles of design and validation of CPS.	CO3	L4
6.	Write briefly about Industrial sensing and actuations.	CO3	L3