NATIONAL INSTITUTE OF TECHNOLOGY PATNA

Department of Computer Science and Engineering

MID SEMESTER EXAMINATION, July- December 2023

B. Tech: CSE Semester-V, Minor ECE, EE, ME
Course Name: Internet of Things **Course Code:** CS54117
Maximum Time: 2 hours **Max. Marks: 30**

Instruction:

1. Attempt all questions.
2. Assume any suitable data, if necessary. (Any other Instruction need to provide by the concerned faculty)
3. The Marks, CO (Course Outcome) and BL (Bloom's Level) related to questions are mentioned on the right-hand side margin.

		Marks	CO	BL
1.	Explain the role of IoT enabling technologies which help in building IoT networks on large scale.	5	CO1	A, R
2.	Discuss M2M Ecosystem with a diagram mentioning all the important components. Define the functionalities of each component in short.	5	CO2	R, U
3.	With a neat diagram, explain how actuators and sensors interact with the physical world. Classify actuators based on energy type.	5	CO1	R, U
4.	Nobody likes looking for parking; especially in big cities, where parking spots can be scarce, and traffic is often dense. And we've all been there! There's almost nothing more frustrating than showing up late for dinner plans or missing appointments due to a lack of parking. Hence, technological solutions for smart parking systems are on demand. Which among CPS, M2M, and IoT systems will be best suitable for designing smart parking systems? Justify your answer.	5	CO3	A, P
5.	The local government wants to establish a smart agriculture system for the farmers. They need to mention the water level, weather, and soil moisture in the agriculture field. The plant's health also needed to be monitored using an automated system. How can IoT be used for the above scenario? Discuss all possible use cases into considerations.	5	CO3	A, C, P
6.	Explain the following errors in sensors in detail. i. offset error. ii. hysteresis error iii. quantization error iv. aliasing error v. deviation	5	CO1	R, U

End of Question