MANIPAL INSTITUTE OF TECHNOLOGY
MANIPAL
(A constituent unit of MAHE, Manipal)

SEVENTH SEMESTER B. TECH (ELECTRONICS AND INSTRUMENTATION)
PROCTORED ONLINE END SEMESTER EXAMINATION Dec. 21/Jan. 22
SUBJECT: Smart Sensors (ICE 4058)

TIME: 9.20-10:45 AM   **DATE: 27/12/2021**   **MAX MARKS: 20**

Note: Answer All questions.

1	A	What is the need for designing software sensors in modern industrial applications? Describe the industrial applications of software sensors.	4M
	B	Assume that you are working in an Intelligent Transportation System application where the data is continuously recorded from smart sensors for traveler information details. Since the data may come with rich noise, a robust filtering technique is needed for accurate extraction of features from time and frequency domain simultaneously. Which filtering technique can be used here? How is this filtering technique different from its predecessors? Describe the working principle of this filtering technique.	3M
	C	Explain the smart home automation technology with a suitable diagram.	3M
2	A	Why is intelligent transportation system being important in the modern world? With the help of a neat diagram, explain the different components of intelligent transportation system.	5M
	B	Discuss any three different types of wireless sensor network configurations.	3M
	C	Describe the two basic operations that are performed in biometric sensors.	2M