

Name:	
Enrolment No:	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, December 2018

Course: Machine to Machine Communication (CSIB 486) **Semester: 7th**

Programme: B.Tech CS-TI & B.Tech CS-MI

Time: 03 hrs.

Max. Marks: 100

Instructions: Attempt ALL questions. The marks for each question are written alongside with the question.

SECTION A

S. No.	Question	Marks	CO
Q1	Explain the architecture of RF-powered sensor node with diagram.	5	CO3
Q2	What are the various factors that affects the security and communication in M2M communication?	5	CO4
Q3	What are the different types of notifications in infrastructure monitoring applications?	5	CO5
Q4	What are the security threats for machine to machine communication? Explain.	5	CO6

SECTION B

Q5	Explain the anatomy of M2M communication. State various applications of M2M communication.	10	CO1
Q6	Discuss the component based M2M reference model in detail.	10	CO2
Q7	What are the types of sensors used in machine to machine communication. Mention the functions of each sensor with labelled diagram.	10	CO3
Q8	What are the different requirements of M2M communication? Differentiate SIM card and USIM card. OR Explain the application of M2M communication in tracing and tagging of RFID vehicle.	10	CO4

SECTION-C

Q9	(a) What is the significance of telemetry and telematics in context of M2M communication?	10	CO1
	(b) How health care, logistics, transportation, retail industry and building construction will use machine to machine communication for their benefits? Explain.	10	CO2
Q10	(a) What do you mean by wireless sensor networks? Explain the architecture and design challenges of wireless sensor networks.	10	CO5
	(b) Write a short note on M2M security framework with labelled diagram.	10	CO6

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SECTION A

S. No.		Marks	CO
Q1	What is Zigbee technology? Explain with its architectural details.	5	CO3
Q2	What are the different requirements of M2M communication? Explain with the help of labelled diagram.	5	CO4
Q3	Explain WSN architecture along with their design challenges in detail.	5	CO5
Q4	Draw a labelled diagram for M2M service bootstrap procedure.	5	CO6

SECTION B

Q5	What is the need for automation of home? How data collected from smart homes will help in making the future houses smarter?	10	CO1
Q6	List out various verticals of machine to machine communication and their significance.	10	CO2
Q7	What are different M2M network devices? How they differ from traditional network devices?	10	CO3
Q8	Compare SIM card and USIM card. Explain the application of M2M communication in tracing and tagging of RFID vehicle. OR State and Explain different requirements of M2M communication?	10	CO4

SECTION-C

Q9	(a) What do you mean by machine to machine communication? Discuss different types of communication technologies used in M2M interactions.	10	CO1
	(b) Discuss various API's and protocols used in M2M communication in detail.	10	CO2
Q10	(a) How 3G network architecture is differ from 4G network architecture. Explain with the help of labelled diagram.	10	CO5
	(b) What are the security threats for machine to machine communication? Explain the terms validation and verification in relation to communication between different machines.	10	CO6