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P.E.S. College of Engineering, Mandya - 571 401
(An Autonomous Institution affiliated to VTU, Belagavi)
Seventh Semester, B.E. - Electronics and Communication Engineering
Semester End Examination; Jan. / Feb. - 2021
Internet of Things

Time: 3 hrs   Max. Marks: 100

Note: Answer **FIVE** full questions, selecting **ONE** full question from each unit.

UNIT - I

1 a.	Explain the hardware resources which enable the development of IoT prototype and product.	6
b.	Explain four layer architecture framework developments at CISCO for smart cities.	8
c.	What are data management and consolidation Gateway? Explain each one.	6
2 a.	Explain the functions of M2M software development tools and relationship of an M2M system with an IoT system.	6
b.	Explain the ITU-T reference model with relevant sketch.	6
c.	Explain wired technology for communication of data from and to devices.	8

UNIT - II

3 a.	Give examples of LWM2M objects and resources.	6
b.	Explain the features of IPv6.	6
c.	Explain how online transactions and processing take place?	8
4 a.	Explain the terms used by message communication protocol.	8
b.	Explain classify ways of organizing Data.	12

UNIT - III

5 a.	Explain cloud deployment model.	8
b.	Explain cloud computing paradigm.	6
c.	Explain how microcontroller circuit used for measuring acceleration components from the acceleration sensor with the help of diagram?	6
6 a.	Discuss public cloud based platform available for IoT with features.	6
b.	How does angular position in a servo meter shaft control using input pulse width?	7
c.	Explain the concepts of participatory sensing of automotive IoT.	7

UNIT - IV

7 a.	Explain how ADC analog sensor outputs give to SPI with Arduino program.	12
b.	Describe cloud computing service models (everything as a service) in a software architectural concept.	8
8 a.	An RFID integrated circuit sends serial data to an Arduino board using UART protocol T_x and R_x inputs at the RFID tag pins. How will serial data be read at pins2 and pins3 as R_x and T_x respectively using Arduino board?	12
b.	Explain Raspberry Pi IDE.	8

UNIT - V

9 a. Describe modelling using use cases and misuse cases with suitable diagram. 8

b. How does smart irrigation result in efficient uses of water? 12

10 a. With a neat sketch, explain layered attacker model. 10

b. Design principle for the set up for identifying vacant spaces using ultrasonic pulses and back reflections from cars to the transceiver at the coordinator. 10

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