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**Question Paper Code: 59276**

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2018

Open elective

Civil Engineering

15UCS976 - INTERNET OF THINGS

(Common to ECE, EEE, EIE, Mechanical, IT, Chemical)

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (5x 1 = 5 Marks)

1. What does a Hall Effect sensor sense? CO1- R  
(a) Temperature      (b) Moisture      (c) Magnetic fields      (d) Pressure
2. Which language is the Arduino IDE written in? CO2- R  
(a) Java      (b) C      (c) C++      (d) PHP
3. \_\_\_\_\_ board allows sewn into clothing. CO3- R  
(a) UNO      (b) Red Board      (c) LilyPad      (d) Mega
4. \_\_\_\_\_ is a web standardized REST ful model for interacting with collections. CO4- R  
(a) Sunspot      (b) Atom      (c) Comet      (d) Proton
5. A Windows Failover Cluster can support up to \_\_\_\_\_ nodes. CO5- R  
(a) 12      (b) 14      (c) 16      (d) 18

PART – B (5 x 3= 15 Marks)

6. Define Internet of Things. CO1-U
7. Differentiate sensor and actuators. CO2- R

- |     |   |        |  |
|-----|---|--------|--|
| 8.  | Design an circuit to temperature sensor using suitable Arduino board. | CO3- R |  |
| 9.  | Write short notes on 'web hooks'.                                     | CO4- R |  |
| 10. | Define data synchronization.  | CO5- U |  |

PART – C (5 x 16= 80Marks)

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|-----|---|----------|------|
| 11. | (a) Explain the detail about Cellular Networks in Internet of things.   | CO1- U   | (16) |
|     | Or  |          |      |
|     | (b) Explain the functionalities of the mobile internet and wired communication in IoT.                                | CO1- U   | (16) |
| 12. | (a) Write a program for Parallel execution utilizing the Mthread library using threads.                               | CO2- Ana | (16) |
|     | Or  |          |      |
|     | (b) Explain the functionalities of cloud computing services for sensor management.                                    | CO2- U   | (16) |
| 13. | (a) Design a circuit to connect the TMP36 temperature controller with Arduino board and explain it.                   | CO3- C   | (16) |
|     | Or  |          |      |
|     | (b) Design a circuit to automatic control for streets lights in smart city using suitable IoT toolkit and explain it. | CO3- C   | (16) |
| 14. | (a) Briefly explain about the Servicing Through a Uniform Interface in REST ful Smart Things.                         | CO4- U   | (16) |
|     | Or  |          |      |
|     | (b) Develop JSON representation of Temperature resource of sun spot. Explain your coding.                             | CO4- App | (16) |
| 15. | (a) Explain in detail about the data synchronization techniques in IoT.   | CO5- U   | (16) |
|     | Or  |          |      |
|     | (b) Explain in detail about the clustering principal in Internet of Things.   | CO5-U    | (16) |