

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

END SEMESTER EXAMINATION-2015

B. Tech VIII Semester

COURSE CODE: 15B1WCI832

MAX. MARKS: 45

COURSE NAME: Internet of Things Architecture and Design

COURSE CREDITS: 03

MAX. TIME: 3 HRS

*Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.*

**Section A**

**(Marks: 9)**

Justify the following statements with suitable examples, diagram and mathematical formulas.

1. There are still some well-founded security concerns about domestic IoT, and a generally accepted development platform remains elusive.
2. What is your definition of IoT?
3. Can we reasonably translate our experiences and emotions into algorithms?
4. What is the difference between machine to machine, event to event and, men to men communication?
5. Will there be sufficient powers for regulatory authorities to effectively counter-balance large corporations who wish to develop IoT?
6. Who is going to benefit from IoT?.
7. What is data synchronization in IoT?
8. Why do we need smart feedback system in IoT?
9. List the five open issues in IoT.

**Section B**

**(Marks: 13.5)**

1. What is the use of smart feedback system in IoT? Explain with the block diagram. Name the components used in smart feedback system. **(4.5)**
2. List the compatible sensors and actuators used in IoT. **(4.5)**
3. Explain the various ways to write embedded code in processing element of IoT. **(4.5)**

Section C

(Marks: 22.5)

1. Draw and explain the schematic of Intel Galileo generation 2 development board.  
Explain the working of following integrated elements on Intel Galileo generation 2 development board
  - a. Intel Quark System-on-Chip (SoC)
  - b. mini-PCI Express
  - c. 100Mb Ethernet port
  - d. Micro-SD slot
  - e. RS-232 serial port
  - f. USB Host, USB Client

(4.5)
2. List the various steps to write the code in Arduino IDE. How will you blink a LED with 60% duty cycle?

(4.5)
3. How can we interface the Wi-Fi with Intel Galileo generation 2 development board?  
Give the procedure to use vi /etc/network/interfaces. What are the possible problems may occurred during the Wi-Fi interface. Write the commands to obtain:
  - a. IP address over Wi-Fi
  - b. IP address over Ethernet

(4.5)
4. What is Open Cv? Explain following, while installing on Yocto with Intel Galileo generation 2 :
  - a. Prepare the image for your Edison
  - b. Enabling UVC ( USB Video device Class ) by customizing the Linux Kernel
  - c. Changing Partition
  - d. Setup root password and WiFi for ssh and FTP

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5. Explain the motorshielding interface of Intel Galileo board with an application in IoT.

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