

P P SAVANI UNIVERSITY

Seventh Semester of B. Tech. Examination

December 2021

SECE4031 Internet of Things

11.12.2021, Saturday

Time: 9:00 a.m. To 11:30 a.m.

Maximum Marks: 60

Instructions:

1. The question paper comprises of two sections.
2. Section I and II must be attempted in separate answer sheets.
3. Make suitable assumptions and draw neat figures wherever required.
4. Use of scientific calculator is allowed.

SECTION - I

- Q - 1** Answer the Following: [05]
- (i)** What is the full form of IoT?
a) Internet of Technology
b) Incorporate of Things
c) Internet of Things
d) Incorporate of Technology
- (ii)** Which layer is used for wireless connection in IoT devices?
a) Application layer
b) Network layer
c) Data link layer
d) Transport layer
- (iii)** Which of the following is used to capture data from the physical world in IoT devices?
a) Sensors
b) Actuators
c) Microprocessors
d) Microcontrollers
- (iv)** Which of the following processor is used in the Raspberry Pi 3 IoT device?
a) Broadcom BCM2711
b) Broadcom BCM2837
c) Broadcom BCM2838
d) Intel 8085
- (v)** Which programming language is used by Arduino IDE IoT software for writing codes?
a) Python
b) Java
c) C/C++
d) JavaScript
- Q - 2 (a)** What's Actuator, explain it's different types. [05]
- Q - 2 (b)** Explain 3-tier layered Architecture of IOT and it's working. [05]
- OR**
- Q - 2 (b)** Explain Advantages & challenges with IOT. [05]
- Q - 3 (a)** Explain Arduino Uno and it's architecture. [05]
- Q - 3 (b)** Explain Node MCU & it's components with advantages. [05]
- OR**
- Q - 3 (a)** With a neat diagram explain how actuators and sensors interact with physical world. [05]
- Q - 3 (b)** List and explain different types of sensors with their example. [05]
- Q - 4** Attempt Any One. [05]
- (i)** Explain Variants of ESP8266.
- (ii)** Explain Raspberry Pi.

SECTION - II

Q - 1 Answer the Following:

(i) The RPL routing is used for _____ networks. **[05]**

- (a) Low power
- (b) Lossy
- (c) Both a and b
- (d) None of the above

(ii) Even with two-factor authentication, users may still be vulnerable to _____ attacks.

- (a) Scripting
- (b) Cross attack
- (c) Man-in-the-middle
- (d) Radiant

(iii) The higher the QoS, the higher the performance in MQTT?

- (a) True
- (b) False

(iv) NFC stands for _____.

(v) RFID stands for _____.

Q - 2 Describe MQTT framework and message format in detail. **[06]**

Q - 3 (a) Explain LoRaWAN standard and it's working. **[06]**

OR

Q - 3 (a) What's BLE and iBeacon? Explain it's working with example. **[06]**

Q - 3 (b) With a neat diagram explain 6LoWPAN protocol and it's methodology in IoT. **[06]**

Q - 4

(i) With a case study relate the concept of securing IoT. **[07]**

(ii) Sketch interfacing diagram to interface RED LED and push button with program. **[07]**
