

Name:	 UPES UNIVERSITY WITH A PURPOSE
Enrolment No:	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, May 2019

Course: B. Tech (CSE with IOT)	Semester: VI
Program: DESIGNING OF IOT APPLICATIONS USING RASPERRY PI AND ARDUINO	Time 03 hrs.
Course Code: CSEG 399	Max. Marks: 100

SECTION A

S. No.	Question	Marks	CO
Q 1	Explain basic functional architecture of Raspberry PI.	4	CO1
Q 2	What is the difference between RFID and Bluetooth?	4	CO2
Q 3	Explain the advantages and disadvantages of IOT?	4	CO1
Q 4	Explain the major Privacy and Security Issues in case of Internet of Things (IoT)?	4	CO2
Q 5	Describe in the context of Internet of Things (IoT) what is meant by a Smart City,	4	CO2

SECTION B

Q 6	Design a circuit with a LED, connecting it to Raspberry PI and to write the python script that makes the LED blink.	10	CO5
Q 7	Clarify the similarities and differences between Raspberry PI and Arduino?	10	CO3
Q 8	Analyze working of stepper motor with suitable code.	10	CO2
Q 9	Design a temperature Sensor based system Write an appropriate code and display result in serial port.	10	CO4
OR			
	Explain all the components that comprise a Raspberry PI board.	10	CO4

SECTION-C

Q 10	Design a Rain Alert System with Raspberry PI and Python. When rain is detected, the buzzer is sounded 5 times in quick succession, followed by a 1s pause. This will repeat until the raindrop are no longer detected. A message will also be printed out on the screen each second while raindrops are detected.	20	CO5
OR			
	Demonstrate the working of Temperature sensor using Raspberry PI and Python. Connect the DS18B20 (Temp sensor) to Raspberry PI and display the temperature readings on the SSH terminal.		CO5
Q 11	Explain with suitable working code with circuit diagram how to use PWM to write	20	CO4

“analog” values to LEDs,			
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SECTION A

S. No.		Marks	CO
Q 1	Explain basic functional architecture of Raspberry PI.	4	CO1
Q 2	List a few operating systems that Raspberry PI supports.	4	CO2
Q 3	Generalize the important Components of Internet of Things.	4	CO1
Q 4	Explain how Energy Consumption affect the Development and Implementation of the Internet of Things (IoT)?	4	CO2
Q 5	Classify different Wi-Fi Protocol for Internet of Things (IoT)?	4	CO2

SECTION B

Q 6	What impacts will the Internet of Things (IoT) have on Agriculture Sector?	10	CO5
Q 7	Identify the differences between Raspberry PI and Arduino?	10	CO3
Q 8	Analyze working of DC motor with suitable code.	10	CO2
Q 9	Write an appropriate code to handle interrupts in Arduino.	10	CO4
OR			
	Describe the different components of a Raspberry PI board?	10	CO4

SECTION-C

Q 10	Design a Rain Alert System with Raspberry PI and Python. When rain is detected, the buzzer is sounded 5 times in quick succession, followed by a 1s pause. This will repeat until the raindrop are no longer detected. A message will also be printed out on the screen each second while raindrops are detected.	20	CO5
OR			
	Develop a Motion sensor-based system using Raspberry Pi and Python. Write an appropriate code and circuit diagram.		CO5
Q 11	Design a Motion sensor using Arduino. Write an appropriate code and circuit diagram.	20	CO3

