


Name:	 UPES UNIVERSITY WITH A PURPOSE
Enrolment No:	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
Online End Semester Examination, Dec. 2020

Course: IMPACT OF IoT & SMART SERVICES ON SOCIETY	Semester: VII
Program: B. Tech. CSE (Sp. IoT &SC)	Time 03 hrs.
Course Code: CSIS 4007	Max. Marks: 100

SECTION A

1. Each Question will carry 5 Marks
2. Instruction: Complete the statement / Select the correct answer(s)

S. No.	Question	CO
Q 1	(a) The Internet of Things (IoT) is a system of: <ul style="list-style-type: none"> A. interrelated computing devices, mechanical and digital machines, objects, animals or people that are provided with unique identifiers (UIDs) B. interrelated computing devices, mechanical and digital machines, objects, animals or people and the ability to transfer data over a network without requiring human-to-human or human-to-computer interaction. C. interrelated computing devices, mechanical and digital machines, objects, animals or people that are provided with unique identifiers (UIDs) and the ability to transfer data over a network without requiring human-to-human or human-to-computer interaction. D. None of the above (b) Devices which converts physical parameters like temperature, motion etc... into the electrical signals are called as: <ul style="list-style-type: none"> A. Sensors B. Actuator C. RFID tags D. None of the above 	CO1
Q2	(a) Devices which transforms electrical signals into physical movements are called as: <ul style="list-style-type: none"> A. Sensors B. Actuator C. RFID tags D. None of the above (b) Setting up the IoT environment includes what?: <ul style="list-style-type: none"> A. Identifying the problem and data collection challenges. B. Identifying the cloud platform for data storage. C. Coding into the processor to meet your expected need after data analysis. D. All above 	CO1
Q3	(a) Wavelength of visible light, in meters, is in the range of: <ul style="list-style-type: none"> A. 10^{-5} to 10^{-6} B. 10^{-6} to 10^{-7} C. 10^{-7} to 10^{-8} D. 10^{-8} to 10^{-9} 	CO2

	<p>(b) _____ also termed as a photo resistor, a device whose resistivity factor is a function of the electromagnetic radiation.</p> <p>A. LED B. ESP 8266 C. LDR D. IR Sensor</p>	
Q4	<p>(a) What best motivates us to go for <i>IoT-Based Smart Street Light System</i>:</p> <p>A. The more than 150 million bulbs that light up the world consume a humongous amount of energy B. The more than 250 million bulbs that light up the world consume a humongous amount of energy C. The more than 350 million bulbs that light up the world consume a humongous amount of energy D. The more than 450 million bulbs that light up the world consume a humongous amount of energy</p> <p>(b) Which out of the following is not an Advantages of the <i>IoT-Based Smart Street Light System</i>:</p> <p>A. Automatic Switching of Street lights B. Maintenance Cost Reduction C. Reduction in CO₂ emission D. Wired Communication</p>	CO2
Q5	<p>(a) In Cloud Computing the term “Cloud” came from:</p> <p>A. A network design that was used by network engineers to represent the location of various network devices and their inter-connection B. The shape of this network design was like a cloud. C. Both A & B D. None of the above</p> <p>(b) To enable the encoding of semantics with the data, well-known technology(ies) is/are:</p> <p>A. RDF (Resource Description Framework) B. OWL (Web Ontology Language) C. Both A & B D. None of the above</p>	CO3
Q6	<p>(a) _____ has come a very long way since Jaap Haartsen, an electrical engineer, invented the technology in 1994 while working for Ericsson in Lund, Sweden.</p> <p>A. Bluetooth B. WiFi C. CDMA D. FDMA</p> <p>(b) _____ is a device that detects the presence or absence of a nearby object, or properties of that object, and converts it into signal which can be easily read by user or a simple electronic instrument without getting in contact with them.</p> <p>A. Temperature sensor B. Pressure sensor C. Proximity sensor D. Chemical Sensor</p>	CO4

SECTION B

1. Each question will carry 10 marks
2. Instruction: Write short / brief notes

Q 7	What effects the <i>Internet of Things</i> (IoT) has on our daily lives? Explain by taking one example of smart device.	C01
Q 8	How do you see <i>The future of IoT</i> ? Give ten predictions about the Internet of Things in next coming few years with hardware requirements especially of sensors.	C02
Q 9	Give a brief sketch of few Network and Communication technologies used for IoT.	C03
Q 10	Trust, Security and Privacy of IoT are the major bottleneck today for IoT products. Comment on this statement. What plans you would have to overcome from these aspects for your IoT product. Support answer by taking one IoT product of you as IoT engineer.	C03
Q 11	Draw and discuss IoT vision especially taking into account of IoT prediction in 2020 and 2025 & beyond. OR Discuss by taking suitable case scenario any two of the following: MQTT, AMQP and JMS.	C04

Section C

1. Each Question carries 20 Marks.
2. Instruction: Write long answer.

Q12	How would you utilize the Cloud Computing and Big Data concepts for developing an IoT projects of any two of these: Smart Cities, Smart home, Smart Building, Smart health? Give a complete sketch of hardware and software requirements for the above along with their uses as an engineer. OR As an IoT engineer discuss how IoT can do a tremendous job for making our lives an easy and automated one in the field of Agriculture or for Home Automation . Give a complete sketch of hardware and software requirements for the above along with their uses as an engineer. Explain your answer either by taking agriculture or home automation.	C04
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