Name:		UPES UNIVERSITY WITH A PURPOSE
Enrolment No:		

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, Dec. 2021

Course: IoT FOR INDUSTRIES **Semester: V**
Program: B. Tech. CSE (Sp. IoT &SC) **Time 03 hrs.**
Course Code: CSIS 4004 **Max. Marks: 100**

SECTION A

(5Qx4M=20 Marks)

S. No.	Question	Marks	CO
Q 1	(a) IoT will generate which forms of value in terms of manufacturing processes: A. Supply Chain Management and Operating Efficiency B. Predictive Maintenance and Inventory Optimization C. Both (a) and (b) D. None of the above (b) IoT applications in mfg. and factory settings is expected to generate _____ of economic value annually by 2025. A. $1.2 to $3.7 trillion B. $1.2 to $3.7 billion C. $0.2 to $1.7 trillion D. $0.2 to $1.7 billion (c) Which out of following is not a challenge for IoT in Manufacturing: A. Integration B. Connectivity C. Sills D. Technology (d) With ____% of companies reporting at least one disruption in the supply chain in the past year, asset tracking using IoT can be a key tool in improving their responsiveness and reducing time to market. A. 81 B. 51 C. 31 D. 11	4	CO1
Q2	(a)_____ 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. A. Temperature sensor B. Pressure sensor C. Proximity sensor D. Chemical Sensor	4	CO1

	(b) Main use cases of _____ sensors can be found in Industrial environmental monitoring and process control, intentionally or accidentally released harmful chemical detection, explosive and radioactive detection. A. Chemical Sensor B. Temperature sensor C. Pressure sensor D. Proximity sensor (c) ____ is one of the most common and important tools to aid in the diagnosis of heart ailments. A. X-Ray B. ECG C. RFT D. TFT (d) With the innovations in _____it is now possible for a patient to be fitted with a portable ECG machine that can be measured and record electrocardiogram results anytime and anywhere using an IoT-based ECG monitoring system. A. Mobile Technology B. IoT Technology C. Computer Technology D. All Above		
Q3	(a) Identify the major advantages of IoT in healthcare: A. Cost Reduction & Improved Treatment B. Faster Disease Diagnosis & Proactive Treatment C. Drugs and Equipment Management & Error Reduction D. All above (b) Identify the major challenges of IoT in Healthcare: A. Underdeveloped initiatives & Possible lack of available memory B. Difficulties with regular updates & Personal sensitive data security C. Both Above D. None of the above (c) ____ is one of the most common and important tools to aid in the diagnosis of heart ailments. A. X-Ray B. ECG C. RFT D. TFT (d) With the innovations in _____it is now possible for a patient to be fitted with a portable ECG machine that can be measured and record electrocardiogram results anytime and anywhere using an IoT-based ECG monitoring system.	**4**	**CO2**

	A. Mobile Technology B. IoT Technology C. Computer Technology D. All Above		
Q4	(a) Why healthcare industry needs IoT applications? A. Aging of Society B. Diseases of affluence C. Shortage of medical staff D. All Above (b) IoT has changed people's lives, especially _____ patients, by enabling constant tracking of health conditions. A. Young B. Elderly C. Infants D. Female (c) By using _____ embedded with IoT, physicians can keep track of patients' health more effectively. A. Wearables B. Other home monitoring equipment C. Both above D. None of the above (d) Select the best answer: A. IoT devices tagged with sensors are used for tracking real time location of medical equipment like wheelchairs, defibrillators, nebulizers, oxygen pumps and other monitoring equipment. B. Deployment of medical staff at different locations can also be analyzed real time. C. Both Above D. None of the above	**4**	**CO3**
Q5	(a) Telematics refers to the _____ transmission of computerized data. A. Long B. Short C. Very short D. None of the above (b) What type of telematics solutions are available in the market: A. Plug-and-play OBD port II Telematics Devices B. Telematics Applications C. Hardwired telematics Devices D. All Above (c) M2M protocol includes: A. MQTT B. CoAP C. OMA LWM2M D. All above	**4**	**CO4**

	(d) The wiring system installed in today's mid-range vehicle comes to a total wire length of __ km and has a substantial influence on weight and cost, so it is critical to any new data model. A. 0.5 B. 5 C. 50 D. 100		
	SECTION B **(4Qx10M=40 Marks)**		
Q 6	As an IoT engineer How would you set up an IoT environment for basic applications.	**10**	**CO1**
Q 7	How do you see IoT helps in the manufacturing processes related to: a. Supply Chain Management b. Operating Efficiency c. Predictive Maintenance d. Inventory Optimization Support your answer by giving some of the well-known benefits received by major companies.	**10**	**CO2**
Q 8	Explain the role of IIoT in Manufacturing Industry. Justify your answer by giving a case study of JCB India.	**10**	**CO3**
Q 9	Discuss major advantages of IoT in healthcare sector. OR Take your own example for technically justifying use of IoT in Retail sector.	**10**	**CO4**
	Section C **(2Qx20M=40 Marks)**		
Q 10	(a) Discuss the features of vehicle infotainment system presently available with respect to IoT. (b) Discuss the role of IoT in retail shopping. Support your answer by giving technical details of any one IoT based product.	**20**	**CO2**
Q11	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 **Home Automation.** 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 **Smart Lightning System**. Give a complete sketch of hardware and software requirements for the above along with their uses as an engineer.	20	**CO4**