PNS SCHOOL OF ENGINEERING &TECHNOLOGY

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1ST INTERNAL ASSESSMENT EXAM QUESTIONS & ANSWER

SUB-Internet of Things (TH-2)

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Internal Assessment : 2023

Subject : Internet of Things (Th-2)

6th Semester

Branch : Computer Science & Engineering

Time : 1 Hour **F.M. : 20**

1. Answer all the questions. [2 x 5]

   (a) Define IOT. Write down 2 applications of IOT.

   (b) Define Actuator. Classify it.

   (c) What are the IOT components ?

   (d) What are the connectivity technologies used in IOT ?

   (e) What is Wireless Multimedia Sensor Network ?

2. Answer the following questions (any Two) [5 x 2]

   (a) Define Sensor. Describe briefly different types of sensors.

   (b) Explain working of RFID technology with neat diagram.

   (c) Explain the types of modes of Detection in WSN with suitable diagram.

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1. (a) Define IoT. Write-down two applications of IoT.

The Internet of Things (IoT) is the network of physical devices & other items embedded with electronics, software, sensors, actuators & network connectivity which enables these objects to get connected & exchange data.

Smart home & smart healthcare are the two applications of IoT.

(b) Define Actuator & classify it.

An actuator is a component of a machine or system that moves or controls the mechanism or the system.

Based on technology, actuators are classified into 6 types such as: - 1-Hydraulic Actuators

2-Pneumatic Actuators

3-Electrical Actuators

4-Thermal Actuators

5- Mechanical Actuators

6-Soft Actuators

(c) What are the IoT components?

The components of IoT are includes Devices, Local network, Internet, Back-end-services, Applications, User Interface.

(d) What are the connectivity technology used in IoT?

In IoT connectivity technologies are IEEE 802.15.4, Zig Bee, 6LOW PAN, Wireless HART, Z-Wave, ISA 100, Bluetooth, NFC & RF-ID.

(e) What is wireless multimedia sensor network?

WMSNs are the networks with the multimedia devices that are capable of to retrieve video, audio, images, As well as scalar sensor data.

2. (a) Define sensor. Describe different types of sensors briefly.

A sensor is a device that detects & responds some type of input from the physical environment.

Based on output, sensor can be classified into 2 types such as: -1- Analog Sensors

2- Digital Sensors

Based on data measured, sensors can be classified into 2 types such as: -1- Scalar Sensor

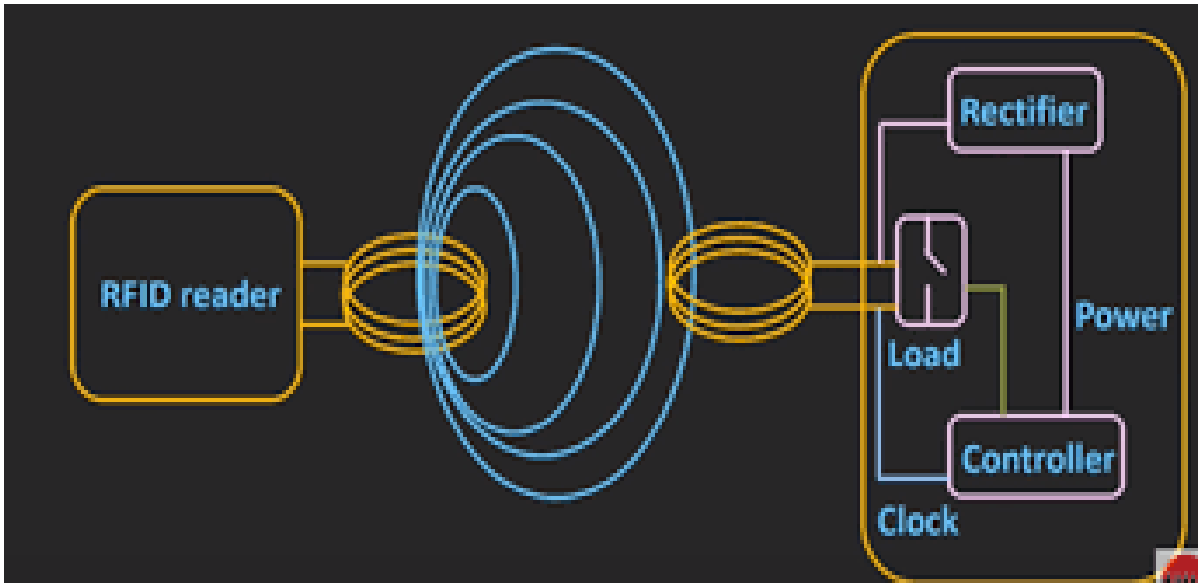
2- Vector Sensor

(b) Explain working of RF-ID technology with the neat diagram.

RF-ID technology is derived from Automatic Identification & Data Capture[ADIC] technology.

AIDC uses wired communications.

RF-ID systems consists of 3 components; an RF-ID tag or smart label, an RF-ID Reader,& an Antenna.



(b) Explain the types of modes of detection in WSN with suitable example.

There are 4 types of modes by which sensor detect the objects .There are as follows:

1- SINGLE SOURCE SINGLE OBJECT DETECTION:-
   In this single object will be declared by a single sensor node.
   The detected data will be sent to the sink node via the intermediate sensors.
2- SINGLE SOURCE MULTIPLE OBJECT DETECTION:-
   In this there will be a single source for detecting multiple objects.
   The detected data on reaching the sink node will identify the various objects.
3- MULTIPLE SOURCE SINGLE OBJECT DETECTION:-
   In this same object will be detected by multiple sensors.
   This is expensive & can be applied for security critical applications.
4- MULTIPLE SOURCE MULTIPLE OBJECT DETECTION:-
   This mode of detection contains more than one object & more than one sensor.
   Each object may be detected by more than one sensor.