PRANVEER SINGH INSTITUTE

CT-I

Even Semester Session 2023-24

B. Tech. VI Semester

IoT Architecture and Protocols (KOT-601)

CO Number	Course Outcome
CO-1	To define (L1-Remember) various parameters related to IoT architecture, IoT reference architecture and protocols related to IoT layers.
CO-2	To explain (L2-Understand) IoT based architecture, IoT reference architecture and protocols related to data link layers, network layer, transport layer, session layer, service layer and security layer.
CO-3	To illustrate (L3-Apply) the concept of IoT architecture and IoT reference architecture and to examine (L4-Analyze) various IoT application layer protocols.
CO-4	To apply (L4-Analyze) IP based protocols and different architecture of IoT in different layers.

Time: 1.5 Hrs. M. M. 15

Section A

Q1. Attempt all questions: **(1x3 = 3 Marks)**

a) Draw IoT architectural outline. CO1

b) Explain the making process of HC-05 Bluetooth module in master and slave configuration. CO2

c) Explain wirelessHART. CO2

Section B

Q2. Attempt all questions: **(2x4 = 8 Marks)**

a i) Describe IoT architectural overview system. How we build IoT architecture? CO2

Or

ii) Describe various views in IoT reference model architecture with labelled diagram. CO2

b i) Explain devices and gateways in the context with M2M and IoT technology fundamentals. CO2

Or

ii) Explain 3GPP and MTC for different type of server model. CO2

c i) Illustrate the use of LAN and WAN used in IoT infrastructure. Also, differentiate between LAN and WAN. CO3

Or

ii) Illustrate the process of XaaS used in IoT system with types, examples, advantages and disadvantages. CO3

d i) Explain detailed architecture view of ETSI M2M associated with service layer taking the example of relay control system mentioning its code and circuit diagram. CO2

Or

ii) Explain the use of IEEE 802.15.4 in context with security in IoT protocol. CO2

Section C

(4x1 = 4 Marks)

Q3

i) Describe BLE and explain frames associated with BLE taking the example of interfacing two Bluetooth modules in master and slave configuration clearly mentioning the circuit diagram and code for home automation. CO2

Or

ii) Describe ZigBee smart energy. Also explain the process of interfacing two ZigBee modules for both way communications with Arduino code and circuit diagram. CO2