VCD/310323 S.Y.B.Sc.CS SEM-IV IoT Technologies 2 ½ HR 75 M

1. **All** questions are **compulsory.**
2. **All questions** carry **equal** marks.
3. Draw **neat, labelled diagrams** wherever necessary

Q.1 Attempt the following (Any Four) **[20 Marks]**

a. What are the advantages and disadvantages of IoT?
b. What are the Specifications & Features of NodeMCU ESP8266?
c. Draw and explain physical design of IoT.
d. Write a short note on IoT frame work.
e. Explain the structure of System on chip(SoC).
f. Explain the following components of Arduino:
a) Crystal Oscillator b) Analog Pins c) ICSP pin d) AREF e) Digital I/O pins

Q.2 Attempt the following (Any Four) **[20 Marks]**

a. Explain Hydraulic and Pneumatic Actuators with its advantages and disadvantages.
b. Explain the concept of Interfacing of actuators.
c. Explain the working of motion sensor.
d. Explain XMPP and UPnP in detail.
e. What are the Privacy and Security Issues in IoT?
f. Write a short note on servo motor.

Q.3 Attempt the following (Any Four) **[20 Marks]**

a. Explain any two IoT communication Protocols.
b. Explain layered network architecture in detail.
c. Explain the applications used in the Transportation.
d. Explain the edge computing use cases.
e. Explain the architecture of edge computing.
f. Explain any two communication models in detail.

Q.4 Attempt the following (Any Five) **[15 Marks]**

a. What are the characteristics of IoT?
b. Explain analog and digital sensors.
c. Difference between Edge Computing and Fog Computing.
d. Write a short note on Relay. Explain different configurations of Relay.
e. Explain IoT applications used in the agriculture.
f. Explain WSN architecture with its type in detail.