

06/06/2025 BE ELECTRICAL SEM-VII C-SCHEME IOT QP CODE: 10087161

(3 Hours)

[Total Marks: 80]

N.B.: (1) Question No. 1 is **Compulsory**.

(2) Attempt any **three** questions out of the remaining **five**.

(3) Each question carries 20 marks and sub-question carry equal marks.

(4) Assume suitable data if required.

1.
  - (a) Compare Arduino and Raspberry Pi platform for IoT development. (5)
  - (b) Compare Zigbee and Z-wave protocol. (5)
  - (c) What is difference between IoT and M2M? (5)
  - (d) Draw and explain different IOT levels in detail. (5)
  - (e) What is the purpose of position and localization in IoT? Discuss in brief. (5)
2.
  - (a) Draw and explain in detail the functional block diagram of IoT. (10)
  - (b) Describe the significance/importance and functionality/role of sensing and actuation in the context of IoT. (10)
3.
  - (a) What are the different communication models used in IoT? Write short note on anyone. (10)
  - (b) What is the role of IoT operating systems in IoT? Briefly describe some of the popular IoT operating systems. (10)
4.
  - (a) List various cloud based IOT platforms and explain any 3 in detail. (10)
  - (b) Explain HTTP and MQTT protocol. (10)
5.
  - (a) Explain the terms: (10)
    - (i). REST
    - (ii). SOAP
    - (iii). WebSocket
  - (b) Explain protocol stack of mobile app for IoT. (10)
6.
  - (a) How IoT can be used in agriculture with respect to monitoring weather conditions, soil quality, crop growth process and water consumption? Explain with respect to the software, hardware, sensors, protocols, architecture and platforms used to design this system. (10)
  - (b) Draw and explain system design diagram of a home automation system using IoT to control devices like light, TV, house climate and home appliances. Explain with respect to the software, hardware, sensors, protocols, and platforms used to design this system. (10)