

(2½ Hours)

[Total Marks: 75]

- N. B.: (1) **All** questions are **compulsory**.
 (2) Make **suitable assumptions** wherever necessary and **state the assumptions** made.
 (3) Answers to the **same question** must be **written together**.
 (4) Numbers to the **right** indicate **marks**.
 (5) Draw **neat labeled diagrams** wherever **necessary**.
 (6) Use of **Non-programmable** calculators is **allowed**.

1. **Attempt any three of the following:** 15
 - a. Explain the components of Internet of Things.
 - b. Write a note on Calm and Ambient Technology.
 - c. What is MAC (Media Access Control) address? Explain.
 - d. Discuss the issue of Privacy in Internet of Things.
 - e. Explain the working of IP Protocol.
 - f. Write a note on DNS (Domain Name System).

2. **Attempt any three of the following:** 15
 - a. Write note on Sketching
 - b. Differentiate between open source and closed source.
 - c. Write note on Sensors and Actuators.
 - d. Write note on Raspberry Pi.
 - e. Discuss the factors we should consider when deciding to build Internet of Things device.
 - f. What are the disadvantages of Open source?

3. **Attempt any three of the following:** 15
 - a. Discuss the methods of 3D printing.
 - b. Write note on LASER Cutting
 - c. Explain the term Scraping.
 - d. What is Polling? Explain in brief
 - e. Write note on MQTT Protocol
 - f. What is CNC Milling? Explain.

4. **Attempt any three of the following:** 15
 - a. Explain the different types of memories
 - b. What is Debugging for Internet of Things device? Explain.
 - c. Write note on Long tail of Internet
 - d. Discuss the business model canvas for Internet of Things
 - e. Explain how to achieve customization in Internet of Things devices.
 - f. Explain the term Venture capital.

5. **Attempt any three of the following:** 15
 - a. What is Crowdsourcing? Explain.
 - b. Discuss the different environmental issues in Internet of Things
 - c. Explain common PCB (Printed Circuit Board) making techniques.
 - d. Discuss the phase of Testing in manufacturing of Internet of Thing devices.
 - e. Explain the important guidelines to deal with issue of security in Internet of Things.
 - f. Discuss the main goals of Open Internet of Things definition