

(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. Define and explain Ubiquitous Computing (ubicom),
 - b. List and explain the roles of people making IOT.
 - c. What is manufactured normalcy field? Explain.
 - d. "Data available through IOT device belongs to public or company which implement the IOT device". Discuss.
 - e. What is DNS? How does it work?
 - f. What are TCP n UDP ports? Explain with examples.

2. Attempt **any three** of the following: 15
 - a. What is sketching? Explain its role in prototyping.
 - b. "Open source has a competitive advantage". Discuss
 - c. How can one tap into the community for promoting IoT devices? Explain.
 - d. With the help of an example explain the process of Scaling up the electronics.
 - e. Explain the following IoT devices built with Arduino:
 - f. i) The Good night lamp. ii) Botanicals iii) Baker treat

3. Attempt **any three** of the following: 15
 - a. Explain the sketch iterate and explore process in prototyping.
 - b. Write a short note on laser cutters.
 - c. What is milling? Explain.
 - d. What are the legalities associated with scrapping ?
 - e. What is comet? Explain
 - f. Explain HTML5 web socket

4. Attempt **any three** of the following: 15
 - a. Explain different types of memory.
 - b. With the help of examples, compare stack and heap.
 - c. What are libraries? Explain with examples
 - d. Define business model .Explain different factors in the definition.
 - e. With the help of a diagram, explain business model canvas.
 - f. What is venture capital? How can one exit?

5. Attempt **any three** of the following: 15
 - a. Explain in details the process of designing the kits.
 - b. Write a short note on mass-producing the case and other fixtures.
 - c. Discuss the issues in scaling up the software for large scale IOT devices.
 - d. Discuss the advantage and disadvantages of technology.
 - e. "The internet destroys the state". discuss
 - f. What is environmental cost of Internet service for IOT device? What is the solution?