

(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 the Internet of Things.
 - b. List and explain the roles of people making IOT.
 - c. Discuss the issue of Privacy in Internet of Things.
 - d. What is manufactured normalcy field? Explain.
 - e. What is DNS? How does it work?
 - f. Define protocol. Explain the following application layer protocols: HTTP, HTTPS, SMTP and FTP.
2. Attempt any three of the following: 15
 - a. What is sketching? Explain its role in prototyping.
 - b. Discuss the tradeoffs between cost versus ease of prototyping.
 - c. Discuss the Disadvantages of Open Source.
 - d. With the help of an example explain the process of scaling up the electronics.
 - e. Explain the following with respect to prototyping embedded devices: Processor Speed, RAM, Networking and Power Consumption.
 - f. What are sensors and actuators explain in brief.
3. Attempt any three of the following: 15
 - a. When choosing a laser cutter which two main features should be considered?
 - b. List and explain non-digital methods or traditional techniques used while prototyping a physical form of a device.
 - c. Explain the concept of repurposing/recycling with respect to prototyping physical design.
 - d. What is Clockodillo? Explain how to solve the security issues of an API by Clockodillo?
 - e. Define JSON and Remote Procedure Calls.
 - f. Explain the designing a web application for Humans.
4. Attempt any three of the following: 15
 - a. Define Memory Management. List and explain the types of Memory.
 - b. Give the difference between Stack and Heap.
 - c. Discuss the concept of debugging in detail.
 - d. What do you mean by Venture Capital? Explain.
 - e. Explain the concept of "From craft to mass production".
 - f. Describe the hobby project and open source.

5. Attempt any three of the following:
- Explain the concept of designing kits.
 - What is the design process of PCB? Explain.
 - Discuss the various certification issue for the IOT product.
 - What do you mean by CROWDSOURCING?
 - Describe the Human cost.
 - Define the term "THE OPEN INTERNET OF THINGS DEFINITION".
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