

Time: (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**.

- Q.1** Attempt **any three** of the following: **15**  
 a. Define the term IOT with two appropriate examples.  
 b. Explain how and where IOT fits with the help of history of technology.  
 c. Write a note on Magic as metaphor.  
 d. What are the flavors of the Internet of Things?  
 e. Explain Calm and ambient technology.  
 f. Define protocol  
 1. HTTP 2. SMTP 3. TCP 4. FTP 5. IMAP
- Q.2** Attempt **any three** of the following: **15**  
 a. How can one tap into community for promoting IOT devices? Explain  
 b. Write a note on Electric Imp.  
 c. Explain advantages and disadvantages of mixing open and close source  
 d. Explain the concept of cost vs ease of prototype.  
 e. Write short note on microcontrollers and system-on-chips.  
 f. What is familiarity? Explain in brief.
- Q.3** Attempt **any three** of the following: **15**  
 a. Explain Clockodillo in detail.  
 b. Explain CNC Milling.  
 c. List all non-digital methods for prototyping. Explain any 3 methods.  
 d. Explain software used for 3D printing.  
 e. Explain repurposing  
 f. Explain Laser cutting & the criteria for selecting the Laser cutter.
- Q.4** Attempt **any three** of the following: **15**  
 a. What is API? Explain in brief  
 b. Define ROM. What are the types of ROM  
 c. Describe funding an Internet of Things startup.  
 d. Write a note on long tail of internet.  
 e. Write a note on Debugging  
 f. Explain the following  
 1. Crowd funding 2. Govt funding

**Q.5** Attempt **any three** of the following:

**15**

- a. Explain the steps for manufacturing PCB's.
- b. Describe the process of designing kit.
- c. what are the different issues in Internet of Things.
- d. What different certifications and tests are required for Internet of Things products?
- e. What various factors require to be polished when scaling up the software?
- f. Why is privacy important for Internet of Things?

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