USIT502 / 02 / 2022

IT 15/11/2022

Time 2½ hours

T.Y. B.Sc

Total Marks: 75

N.B.: (1) **All** questions are **Compulsory.**

(2) Make **suitable assumptions** where ever necessary and **state the assumption made.**

(3) Answers to the **same questions** must be **written together** .

(4) Numbers to the **right** indicates **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 and explain the Internet of Things (IoT).
b. What are the enchanted objects? Explain.
c. Explain calm and ambient technology.
d. What do you mean by affordances? Discuss the concept of good and bad design.
e. Explain the TCP /IP protocol
f. What is DNS? How does it works?

Q 2. Attempt *any three* of the following : 15

a. Explain the process of prototyping in detail.
b. Discuss the advantages and disadvantages of working with Open Source
c. Discuss the trade- off between cost and ease of prototyping.
d. What is Aurdino? Explain
e. What are the two main electronic devices in prototyping embedded devices? Explain.
f. What are microcontrollers? Explain.

Q 3. Attempt *any three* of the following : 15

a. What is 3D printing? What is its use?
b. Explain the sketch iterate and explore process in prototyping.
c. How should one prepare for prototyping the physical design?
d. What is an API? What do you mean by mashing up API?
e. What is polling? Explain.
f. What is scraping? Explain.

Q 4. Attempt *any three* of the following : 15

a. Explain different types of memory
b. What are libraries? Explain with examples
c. Explain in detail the process of debugging the code for embedded devices.
d. Define business model .Explain different factors in the definition.
e. Write note on Venture Capital
f. What is crowd funding? Explain

Q 5. Attempt *any three* of the following : 15

a. How printed circuit boards are designed? Explain.
b. Discuss the issues in scaling up the software for large scale IoT devices.
c. Explain the categories while moving from prototyping to manufacturing.
d. Explain privacy with respect to IoT devices in detail.
e. Discuss the environmental issues associated with IoT devices.
f. Discuss the human cost associated with the production of IoT devices.

~*~*~*~*~*~*~*~*~*~*~