

(3Hours)

[Total Marks: 80]

- N.B. (1) Question no. 1 is compulsory.**  
**(2) Answer any 3 question out of remaining questions.**  
**(3) Assume suitable data if necessary.**  
**(4) Illustrate your answers with neat sketches.**

- Q1** Solve any 4 out of six **20**
- a** Differentiate Between Traditional Design and Mechatronic Design
  - b** Give applications of Mechatronics System in Factory
  - c** Give the advantages of Micro-processor
  - d** Why is Hadoop used for Big data Analysis
  - e** What is cloud Computing and give its importance
  - f** Write a short note on HTTP.
- Q2** **a** Draw the Hadoop Ecosystem and explain the various tools in short **10**  
**b** Give the various wireless Standardised protocols in IOT. **10**
- Q3** **a** Explain the 8051 Micro-controller Architecture with a neat label diagram **10**  
**b** Give the role of Cloud Computing in IOT along with integration challenges **10**
- Q4** **a** With a neat example explain how Arduino is beneficial for development of IOT devices **10**  
**b** What are Restful Principles and what do the key Principles of RESTful Design Include **10**
- Q5** **a** What is the need for IOT and explain the layers of IOT **10**  
**b** Explain how Hadoop MapReduce can be used for Batch Data Analysis **10**
- Q6** Choose and solve four out of the following six questions **20**
- a** Give Key Challenging Areas for IOT
  - b** Give the Feature of Apache Oozie
  - c** Give advantages and Disadvantages of Mechatronic design
  - d** Differentiate between Cloud and Fog computing
  - e** What is the need for Standardized Protocols for IOT wireless technologies
  - f** Give the next evolution in IOT

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