

**Duration: 3 hrs**

**[Max Marks: 80]**

- N.B. : (1) Question No 1 is Compulsory.  
(2) Attempt any three questions out of the remaining five.  
(3) All questions carry equal marks.  
(4) Assume suitable data, if required, and state it clearly.

- 1 Attempt any FOUR [20]
- a What are the barriers to value creation in industry 4.0.
  - b Differentiate between IoT level 2 and level 3 application model
  - c Explain the characteristics of IoT.
  - d Compare IoT and M2M.
  - e What is the function of Apache spark.
- 2 a How CAT LTE M1 connectivity technology is used for IoT. [10]
- b Explain cyber physical systems in relation to Industry 4.0. [10]
- 3 a Define IoT. Explain IoT levels 4 to 6 with necessary diagram. [10]
- b Explain CoAP protocol with diagram. [10]
- 4 a Explain how plant safety and security is done in Industrial IoT. [10]
- b How Structural Health Monitoring is done using IoT? [10]
- 5 a Explain SOAP and REST architectures and differentiate between them. [10]
- b Explain human machine interaction in Industry 5.0. [10]
- 6 a Explain NBIoT protocol in detail with diagram. [10]
- b Explain reference architecture of Industrial IoT with neat diagram. [10]