

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)

CLASS: MTECH
BRANCH: CSE/EEE

SEMESTER : I
SESSION : MO/19

SUBJECT: IT518 INTERNET OF THINGS

TIME: 3:00 HOURS

FULL MARKS: 50

INSTRUCTIONS:

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
 2. Attempt all questions.
 3. The missing data, if any, may be assumed suitably.
 4. Before attempting the question paper, be sure that you have got the correct question paper.
 5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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- Q.1(a) Draw the functional block diagram of an IoT application. Give two examples of the ways in which analytics are used for M2M applications [5]
- Q.1(b) With a diagram explain the capillary networks and the networking technologies that IoT applications use. [5]
- Q.2(a) Explain the ETSI high level M2M architecture. Compare it with ITU -T IoT architecture. [5]
- Q.2(b) What are M2M interfaces and resource management modules? Explain with appropriate diagrams. [5]
- Q.3(a) What are the architectural constraints of REST? Differentiate between a stateful and stateless communication model. Give one example for each. [5]
- Q.3(b) Explain the WSN clustering architecture for IoT systems. Difference between rest based API's and Web socket based API's. [5]
- Q.4(a) Explain the UMTS cellular network for lot/M2M. Give two features each of 6LowPAN, AMQP, XMPP protocols. [5]
- Q.4(b) Draw the model of communication of CoAP with all its types. How are they different from Push pull communication? [5]
- Q.5(a) What are the main aspects of man in the middle attack in IoT systems? Explain how security can be ensured with virtual private networks, public key infrastructures. [5]
- Q.5(b) Design the functionality of smart home lighting and air conditioning control using IoT. Explain how the design of IoT applications differ for level 1 and level 4 deployment models. [5]

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