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Roll No. ....

TCS–604/TIT–604

B. TECH. (CS/IT) (SIXTH SEMESTER) END SEMESTER EXAMINATION, 2018

INTERNET OF THINGS

Time : Three Hours

Maximum Marks : 100

Note : (i) This question paper contains five questions with alternative choice.

(ii) All questions are compulsory.

(iii) Instructions on how to attempt a question are mentioned against it.

(iv) Each part carries **ten** marks. Total marks assigned to each question are **twenty.**

1. Attempt any *two* questions of choice from (a), (b) and (c).   (2×10=20 Marks)

   (a) Define IoT protocol stack architecture. Explain in detail about the functioning of

sensors, local processing, local storage, network, internet, cloud processing and cloud storage by taking a suitable example.

(b) Define the functional components of a middleware for IoT based systems.

(c) Elaborate 4 different pillars of IoT.

2. Attempt any *two* questions of choice from (a), (b) and (c). (2×10=20 Marks)

(a) Differentiate between ZigBee and 6LoWPAN protocol based on IoT Network Layers of OSI Model.

(b) Define the BACnet protocol and its architecture in detail.

(c) Explain IEEE 802.15.4 standard with its architecture. Also, mention its standards and applications of IEEE802.15.4. 10

3. Attempt any *two* questions of choice from (a), (b) and (c). (2×10=20 Marks)

(a) List the various limitations of IoT. Does security issue exist in IoT ? How does WoT (Web of Things) overcome IoT limitations ?

(b) Explain the detailed cloud architecture for Internet of Things. Support your answer with proper figure.

(c) Define the following :

(i) Cloud of Things

(ii) Internet of Everything

4. Attempt any *two* questions of choice from (a), (b) and (c). (2×10=20 Marks)

(a) Explain the relationship between clusters and cascades based on cascading behaviours in network. 10

(b) Differentiate between Internet of Things (IoT) and Web of Things (WoT).

(c) Explain the concept of Information Cascades. Also, define some real world examples where Information Cascade is used.

5. Attempt any *two* questions of choice from (a), (b) and (c). (2×10=20 Marks)

(a) Propose the use of clustering, software agents and synchronisation techniques in order to overcome the challenges of

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managing the resources of the Internet of Things objects.

(b) Briefly explain the Smart Electric Vehicle Charging Infrastructure using Internet of Things.

(c) Write the steps involved and code for lightening an LED with the Raspberry's Pi GPIO.

F. No. : a-97