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B. Tech ECE (Semester – 8th)
INTERNET OF THINGS
Subject Code: BECED1824
Paper ID: 18111348

Time: 03 Hours **Maximum Marks: 60**

Instruction for candidates:

1. Section A is compulsory. It consists of 10 parts of two marks each.
2. Section B consist of 5 questions of 5 marks each. The student has to attempt any 4 questions out of it.
3. Section C consist of 3 questions of 10 marks each. The student has to attempt any 2 questions.

Section – A **(2 marks each)**

Q1. Attempt the following:

a. Define IoT (Internet of Things) and briefly explain its significance in modern technology.
b. Describe two examples of how IoT devices are utilized in everyday life to enhance efficiency and convenience.
c. What is the significance of Machine-to-Machine (M2M) communications in the realm of IoT?
d. Compare different service models in cloud computing.
e. What is the significance of Sensor-Cloud in IoT applications?
f. Analyze the benefits of integrating SDN with IoT infrastructures.
g. What are the limitations of the current network infrastructure, and how does Software-Defined Networking (SDN) address these challenges?
h. How does addressing interoperability challenges in IoT systems contribute to the advancement of IoT technology?
i. How do proxy servers enhance the efficiency and security of IoT communications?
j. How does Open Flow facilitate rule placement in SDN environments?

Section – B **(5 marks each)**

Q2. Discuss two real-world applications where M2M communication plays a crucial role and outline three key features of M2M systems.

Q3. What is the role of data handling and analytics in SDN environments? Explain how SDN enables efficient data collection, processing, and analysis for network optimization and troubleshooting.

Q4. What are the key considerations when comparing different cloud computing service models, and how do they impact businesses and users?

Q5. What are the applications of fog computing in the smart grid domain, and how does it enable intelligent energy management, distribution, and monitoring?

Q6. What are the advantages and limitations of IPv4 and IPv6 protocols in IoT networks, and how do they address the challenges of addressing and scalability?

Section – C **(10 marks each)**

Q7. Explain the concept of fog computing in the context of IoT, highlighting its importance and advantage it offers over traditional cloud-based processing.

Q8. Discuss the implementation of IoT projects using Raspberry Pi. Describe the steps involved in setting up Raspberry Pi for IoT applications and provide examples of IoT projects that can be built using Raspberry Pi as the core platform.

Q9. Explain the different types of actuators used in IoT systems, highlighting their respective functionalities and applications across various industries?