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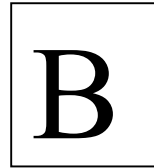
**SNS College of Technology, Coimbatore-35.**  
(Autonomous)

**B.E/B.Tech- Internal Assessment -I**  
**Academic Year 2023-2024 (ODD)**

**Fifth Semester**

**Computer Science and Engineering**

**19ITT302 & INTERNET OF THINGS- Answer Key**



**Time: 1<sup>1/2</sup> Hours**

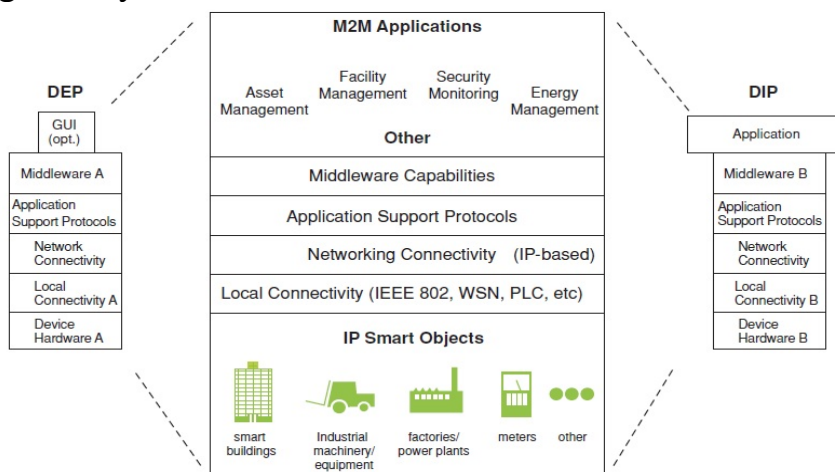
**Maximum Marks: 50**

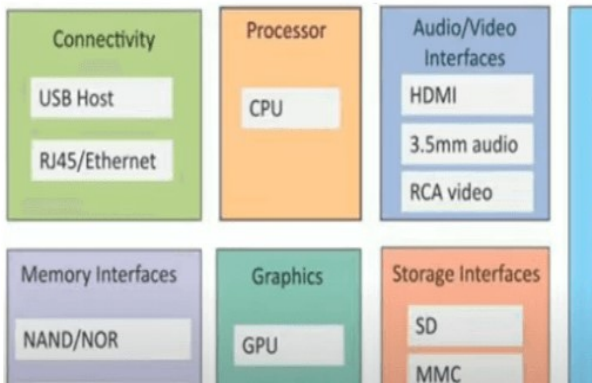
**Answer All Questions**

**PART - A (5 x 2 = 10 Marks)**

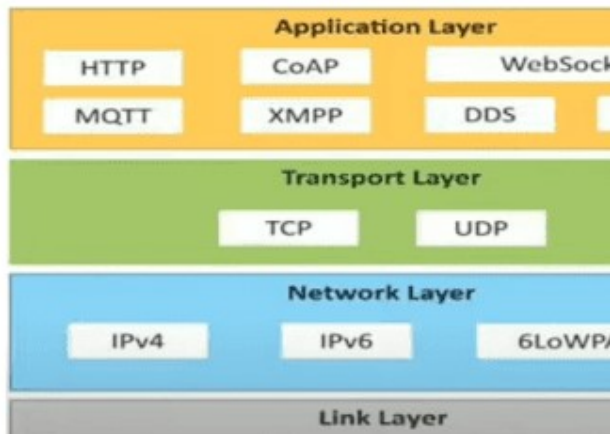
		CO's	BLOOMS LEVEL
1.	Define IoT The Internet of Things (IoT) describes the network of physical objects— “things”—that are embedded with sensors, software, and other technologies for the purpose of connecting and exchanging data with other devices and systems over the internet.	CO1	Und
2.	What are the 4 stages of IoT architecture? <ul style="list-style-type: none"> <li>• Application Layer</li> <li>• Data Processing Layer</li> <li>• Network Layer</li> <li>• Sensing Layer</li> </ul>	CO1	Und
3.	Differentiate IPv4 and IPv6. IPv6 was developed by the Internet Engineering Task Force (IETF) to deal with the long-anticipated problem of IPv4 address exhaustion. IPv4 has 32 bits and Ipv6 address uses 128 bits.	CO1	Rem
4.	How can we overcome scalability issues in IoT? <ul style="list-style-type: none"> <li>• Use Star Network Topology.</li> <li>• Standard-Based Wireless Protocol.</li> <li>• Automate Managing and Deploying.</li> <li>• Take Hybrid Approach.</li> </ul>	CO2	Ana
5.	List out any 5 IoT services in Agriculture. <ul style="list-style-type: none"> <li>• Monitoring of climate conditions.</li> <li>• Greenhouse automation.</li> </ul>	CO2	Rem

	<ul style="list-style-type: none"> <li>• Crop management.</li> <li>• Cattle monitoring and management.</li> <li>• Precision farming.</li> <li>• Agricultural drones. .</li> </ul>		
	<b>PART - B (13+13+14=40 Marks)</b>		
6.	<p>a) Briefly discuss in detail about Basic Nodal Capabilities of IoT with suitable diagram.</p> <p>Remote device generally needs to have a basic protocol stack. Basic protocol supports as minimum local connectivity and networking connectivity. In addition, some higher layer application support protocols are generally needed.</p>	CO1	Und
	<b>(or)</b>		
	<p>b) Discuss in detail about the Physical Design of IoT with diagram.</p> <p>Physical Design of IoT refers to IoT Things/Devices and IoT Protocols. Things are Node device which have unique identities and can perform remote sensing, actuating and monitoring capabilities. IoT Protocols helps Communication established between things and cloud-based server over the Internet.</p> <p>1) Things/ Devices:</p>	CO1	Rem





## 2) IoT Protocols



7. a) Explain in detail about the IoT Communication Models with suitable diagrams and examples. There are several different types of models available in an IoT system that is used to communicate between the system and server like the
- Request-response model,
  - Publish-subscribe model,
  - Push-pull model,
  - Exclusive pair model.

CO1

Und

(or)

		<p>b) Elaborate on the following with suitable example</p> <p>i) IoT Functional Blocks</p> <ul style="list-style-type: none"> <li>• Application</li> <li>• Management</li> <li>• Services</li> <li>• Communication</li> <li>• Security</li> <li>• Device</li> </ul> <p>ii) IoT Communication APIs</p> <ul style="list-style-type: none"> <li>• REST-based communication APIs</li> <li>• WebSocket based communication API</li> </ul>	CO2	Und
8.	(a)	<p>Compare and Contrast the various IOT levels and deployment templates in detail with block diagram.</p> <p><b>IoT Level-1(With block diagram)</b></p> <p><b>IoT Level-2(With block diagram)</b></p> <p><b>IoT Level-3(With block diagram)</b></p> <p><b>IoT Level-4(With block diagram)</b></p> <p><b>IoT Level-5(With block diagram)</b></p> <p><b>IoT Level-6(With block diagram)</b></p>	CO1	Ana
		(or)		
	(b)	<p>Explain in detail about Structural aspects of IoT with suitable example.</p> <ul style="list-style-type: none"> <li>• Environment Characteristics</li> <li>• Traffic Characteristics</li> <li>• Scalability</li> <li>• Interoperability</li> <li>• Security and Privacy</li> <li>• Open Architecture</li> </ul>	CO2	Rem
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**Rem-Remember**  
**App- Apply**

**Und- Understand**  
**CO- Course Outcome**

**Ana- Analyze**