Reg. No. : [ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]

Question Paper Code: U5G04

B.E./B.Tech. DEGREE EXAMINATION, NOV 2024

Fifth Semester

(Artificial Intelligence And Machine Learning)

21UAM504   BUILDING INTERNET OF THINGS

(Regulations 2021)

Duration: Three hours   Maximum: 100 Marks

Answer All Questions

PART A - (10 x 2 = 20 Marks)

1.	Differentiate active and passive sensors with example.	CO1-U
2.	Give two examples of common APIs used in IoT and their functions.	CO1-U
3.	What is Global value Chains?	CO1-U
4.	Explain an IoT use case in health care and its impact on patient care.	CO1-U
5.	Why is "Interoperability" important in IoT systems?	CO1-U
6.	Howdoes"Reliability"affectM2M communication?	CO1-U
7.	How does the Cloud Layer support IoT architecture?	CO1-U
8.	What is meant by event detection in the context of IoT functional information?	CO1-U
9.	How does remote access enhance home automation systems?	CO1-U
10.	What is the purpose of alarm integration in IoT surveillance systems?	CO1-U

PART – B (5 x 16= 80Marks)

11. (a) Explain the concept of various protocols used in IoT for user CO1-U   (16)
       Application?

Or

(b) Illustrate the importance of integration and modular design in the   CO1-U   (16)
    physical design of IoT systems. How do modular components and
    integration strategies contribute to system flexibility,
    maintenance, and scalability?

12. (a) Consider a scenario where the homeowner wants to reduce energy consumption. How would the smart thermostat and its features contribute to this goal?   CO2-App   (16)

<div align="center">Or</div>

   (b) Compare the M2M value chains in healthcare and transportation sectors. Identify similarities and differences in their components, data management practices, and regulatory considerations.   CO2-App   (16)

13. (a) Explain in detail the main design principles and needed capabilities of IoT.   CO1-U   (16)

<div align="center">Or</div>

   (b) Describe the main design principles of IoT and analyze their role in shaping IoT applications.   CO1-U   (16)

14. (a) With the neat Sketch, Write the operational views of IoT ensure real time data processing and reliable communication between devices.   CO2-App   (16)

<div align="center">Or</div>

   (b) Using an environmental monitoring system, describe how limited processing power at the device level and latency in transmitting data to the cloud impact real time analysis and decision making. Show how design choices help to mitigate these challenges.   CO2-App   (16)

15. (a) Describe how cloud computing provides scalability and flexibility to IoT deployments. How does the cloud enable IoT systems to handle varying workloads and expand over time?   CO1-U   (16)

<div align="center">Or</div>

   (b) Explain how these privacy issues affect individuals and organizations. Identify potential risks, such as personal data breaches, surveillance, and misuse of sensitive information. Provide examples where applicable.   CO1-U   (16)

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