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C

Question Paper Code: U4304

B.E. / B.Tech. DEGREE EXAMINATION, APRIL / MAY 2025

Professional Elective

Electronics and Communication Engineering

21ECV304- IOT ECOSYSTEM

(Regulations 2021)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 1 = 5 Marks)

1. Which of the following best describes the Internet of Things (IoT)? CO1-U
 - (a) A collection of servers connected over the internet.
 - (b) A network of interconnected physical devices that collect and exchange data.
 - (c) A system of virtual networks for data processing.
 - (d) A platform for sharing software applications.
2. Which of the following is a type of IoT processing topology? CO1-U
 - (a) Distributed Processing
 - (b) Centralized Processing
 - (c) Edge Processing
 - (d) All of the above
3. RFID (Radio Frequency Identification) technology primarily uses which basic sensing principle? CO1-U
 - (a) Temperature sensing
 - (b) Electromagnetic field interaction
 - (c) Pressure changes
 - (d) Light reflection
4. What does SIoT stand for? CO1-U
 - (a) Social Internet of Things
 - (b) Secure Internet of Things
 - (c) Smart Internet of Things
 - (d) Standard Internet of Things
5. Which programming environment does Packet Tracer use for IoT simulations? CO1-U
 - (a) Python IDE
 - (b) Visual Studio Code
 - (c) Blockly (Visual Programming Language)
 - (d) JavaScript Editor

PART – B (5 x 3= 15 Marks)

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| 6. | Infer the quantization error affects in sensors? | CO1-U |
| 7. | Differentiate Zigbee and Bluetooth. | CO1-U |
| 8. | What are the General Characteristics of WSN? | CO1-U |
| 9. | Differentiate intrusive and non-intrusive sensors. | CO1-U |
| 10. | Mention few IoT devices available in Cisco Packet Tracer. | CO1-U |

PART – C (5 x 16= 80 Marks)

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| 11. | (a) Explain the various types of actuators that can be used in IoT. | CO1-U | (16) |
| | Or | | |
| | (b) Describe the different blocks of sensor nodes in IoT. | CO1-U | (16) |
| 12. | (a) Analyze the various decision making approaches chosen for offloading data in IoT. Justify the suitable technique. | CO5-Ana | (16) |
| | Or | | |
| | (b) Analyze the critical factors to be considered during the design of IoT device using various atmospheric sensors. | CO5-Ana | (16) |
| 13. | (a) How the concept which is not suitability of traditional transport layer protocols in WSN Scenario? | CO4-App | (16) |
| | Or | | |
| | (b) Design WSN architecture for smart city application in IoT by applying the basic sensor characteristics. | CO3-App | (16) |
| 14. | (a) Develop a Meta-Wearable sensor system by applying the concept of wearable sensors. | CO3-App | (16) |
| | Or | | |
| | (b) Construct an efficient healthcare system using various sensors to address the problem of elderly persons. | CO4-App | (16) |
| 15. | (a) Discuss the visual coding blocks in packet tracer environment that can be used to implement Hello world Program in packet tracer. | CO4-App | (16) |
| | Or | | |
| | (b) Design a smart light project using packet tracer. | CO4-App | (16) |