**Reg. No. :** | | | | | | | | | | | | |

# Question Paper Code: U4305

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

Professional Elective

Electronics and Communication Engineering

21ECV305-IOT NETWORKS AND PROTOCOLS

(Regulations 2021)

Duration: Three hours Maximum: 100 Marks

Answer All Questions

PART A - (5 x 1 = 5 Marks)

1. _____ will enable the humans to access, control and manage the operation. CO1-U

   (a) IoT (b) Bigdata (c) Network (d) Communication

2. Which of the following command is used to trigger the Amazon echo IoT device? CO1-U

   (a) Hello (b) Suri (c) Alexa (d) Hey

3. Error Control Mechanism used in _____Communication Networks CO1-U

   (a) FEC (b) ARQ (c) Both a & b (d) NONE

4. IoT devices are naturally vulnerable to _____ threats. CO1-U

   (a) Sensors (b) Heterogeneity (c) Security (d) Connectivity

5. Which category finds an increase in applications targeting health and fitness? CO1-U

   (a) Personal IoT (b) Group IoT (c) Community IoT (d) Industrial IoT

PART – B (5 x 3= 15 Marks)

6. List out the interfaces used in IoT. CO1-U
7. What is meant by smart things in IoT? CO1-U
8. Mention the benefits of SoC. CO1-U
9. Differentiate spoofing and eavesdropping. CO1-U
10. List the first three laws of information. CO1-U

PART – C (5 x 16= 80 Marks)

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| 11. | (a) | With the help of an architecture diagram, explain the role of IoT sensors in Smart transportation. | CO1-U | (16) |
| | | Or | | |
| | (b) | Discuss the challenges and futures involved in wearable IoT devices | CO1-U | (16) |
| 12. | (a) | Design the mobile phones with the knowledge of various IoT sensors. | CO2-App | (16) |
| | | Or | | |
| | (b) | Choose the suitable protocol to interconnect upper layer and lower layer with appropriate fields. | CO2-App | (16) |
| 13. | (a) | Analyze the WSN with optimal cluster headers that can lower energy consumption and extend the life cycle of network using LEACH routing protocol | CO3-App | (16) |
| | | Or | | |
| | (b) | Analyze Pump Slowly and Fetch Quickly (PSFQ) protocol and illustrate how it outperforms SRM-I in terms of error tolerance, communication overhead and delivery latency. | CO3-App | (16) |
| 14. | (a) | Create a smart room to connect smart things and sensors that directly connected with MCUs(Without Gateways) | CO3-App | (16) |
| | | Or | | |
| | (b) | Assume that 100 motes with minimum battery lifetime are placed in a crop field which form clusters and transfer the sensor data (temperature, Humidity and moisture level) to sink. Design an energy efficient routing protocol to improve the life time of a wireless sensor network. | CO3-App | (16) |
| 15. | (a) | Analyze the challenges involved to develop a model for city automation in IoT. | CO5-Ana | (16) |
| | | Or | | |
| | (b) | Analyze the challenges involved to develop a model for commercial managements in IoT. | CO5-Ana | (16) |