

**IV B.Tech I Semester Regular Examinations, November – 2022**  
**COMMUNICATION STANDARDS AND PROTOCOLS**  
**(Electronics and Communication Engineering)**

**Time: 3 hours****Max. Marks: 75**

*Answer any FIVE Questions*  
*ONE Question from Each unit*  
*All Questions Carry Equal Marks*

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**Unit – I**

- 1 a) Why are digital signals better than analog signals? Explain. [7]  
 b) Explain the telephone system and data communications. [8]

(OR)

- 2 a) Give a brief note on data transmission modes. [7]  
 b) List all the network topologies and give its applications. [8]

**Unit – II**

- 3 Explain the OSI Reference models in detail and also write the disadvantages of it. [15]

(OR)

- 4 a) Draw and explain the twisted pair media. [7]  
 b) List and explain types of errors. [8]

**Unit – III**

- 5 a) Give a brief note on Dial up Modems. [7]  
 b) Compare and contrast TCP and UDP protocols. [8]

(OR)

- 6 a) What are the advantages and disadvantages of ARP. [7]  
 b) Explain in detail about UART. [8]

**Unit – IV**

- 7 a) Explain in detail about GSM. [7]  
 b) What are the advantages and disadvantages of IR protocols. [8]

(OR)

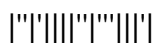
- 8 a) What are the applications of NFC protocols and explain. [7]  
 b) Compare and contrast Bluetooth and Wi-Fi. [8]

**Unit – V**

- 9 a) Explain switch and compare it with Hub. [7]  
 b) Give a brief note on LAN and WAN. [8]

(OR)

- 10 a) Discuss in detail about PAT and NAT. [7]  
 b) Describe the network routing algorithms. [8]



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**Unit – I**

- 1 Compare analogue and digital communication and give which is the best for data communication and why. Elaborate. [15]  
 (OR)
- 2 a) Give a brief note on communication techniques. [7]  
 b) Explain and differentiate serial and parallel communication. [8]

**Unit – II**

- 3 a) Explain the physical and electrical characteristics of wire. [7]  
 b) Discuss OSI reference model. [8]  
 (OR)
- 4 a) What are the different types of error detection methods? Explain the CRC error detection technique using generator polynomial  $x^4 + x^3 + 1$  and data 11100011. [7]  
 b) Draw and explain the Coaxial media. [8]

**Unit – III**

- 5 a) Compare and contrast RS485 and RS232. [7]  
 b) Give a brief note on Leased line modems. [8]  
 (OR)
- 6 a) Explain CAN and DHCP protocols. [7]  
 b) What are the advantages and disadvantages of OFC protocols? [8]

**Unit – IV**

- 7 a) What are the advantages and disadvantages of NFC and IR protocols? [7]  
 b) Compare and contrast Bluetooth and Wi-Fi. [8]  
 (OR)
- 8 a) What are the applications of Zigbee and explain. [7]  
 b) Explain the satellite communication. [8]

**Unit – V**

- 9 a) Discuss the firewalls and write its applications. [7]  
 b) Explain in detail about PAN and compare it with LAN. [8]  
 (OR)
- 10 Explain the functions of following devices: [15]  
 a) Hub  
 b) Bridges



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**Unit-I**

- 1 a) What is the need for modulation? List all the types of modulation. [7]  
b) Explain about the wireless communications. [8]  
(OR)
- 2 Explain the following: [15]  
(a) Star topology.  
(b) Ring topology.  
(c) Mesh topology.

**Unit – II**

- 3 Draw and explain the fiber optic media. [15]  
(OR)
- 4 a) Discuss about the various transmission media available at the physical layer. [7]  
b) Explain the functionality of each layer in OSI reference model. [8]

**Unit – III**

- 5 a) Compare and contrast Dialup Modems and Leased line modems. [7]  
b) List the types of ethernet and write its advantages. [8]  
(OR)
- 6 a) Give brief notes on UART. [7]  
b) Describe MAC and IP protocols. [8]

**Unit – IV**

- 7 a) Write the advantages and disadvantages of Wi-Fi. [7]  
b) Discuss in detail about Zigbee. [8]  
(OR)
- 8 a) What are the applications of GPRS and explain. [7]  
b) Explain in detail about GSM. [8]

**Unit – V**

- 9 a) Discuss the firewalls and write its applications. [7]  
b) Explain the working of Hub and Bridges. [8]  
(OR)
- 10 a) Give brief notes on network routing algorithms. [7]  
b) Discuss in detail about NAT and PAT. [8]



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**Unit – I**

- 1 a) List and explain the characteristics of analog signals. [7]  
 b) How do you convert analog signal to digital signal? Discuss. [8]  
 (OR)
- 2 Explain the following: [15]  
 (a) Tree topology  
 (b) Bus topology  
 (c) Daisy chain topology

**Unit – II**

- 3 a) Explain the physical and electrical characteristics of wire. [7]  
 b) Describe guided transmission media. [8]  
 (OR)
- 4 a) Explain the algorithm for CRC method of error checking. [7]  
 b) Discuss flow control and its applications. [8]

**Unit – III**

- 5 a) List the types of ethernet and write its disadvantages. [7]  
 b) Explain the TCP and IP protocol. [8]  
 (OR)
- 6 a) Compare and contrast RTU and ASCII mod-bus. [7]  
 b) Write down the applications of UDP and DHCP protocols. [8]

**Unit – IV**

- 7 a) Explain about the Satellite Communication. [7]  
 b) Discuss in detail about Bluetooth. [8]  
 (OR)
- 8 a) Compare and contrast NFC and IR protocols. [7]  
 b) What are the applications of Bluetooth and ZigBee. [8]

**Unit – V**

- 9 a) Describe the sensor networks and give its applications. [7]  
 b) Explain the working of switches and Hubs. [8]  
 (OR)
- 10 a) Give brief notes on DNS. [7]  
 b) Compare and contrast Internet and Intranet. [8]

