



B.E/B.TECH DEGREE EXAMINATIONS: NOV/DEC 2023

(Regulation 2018)

Fifth Semester

ELECTRONICS AND COMMUNICATION ENGINEERING (In UPPERCASE)

U18ECI5203: Communication Networks

COURSE OUTCOMES

- CO1:** Describe network topologies, protocols and models.
CO2: Demonstrate and analyse data link layer protocols and LAN standards.
CO3: Analyze routing algorithms and methods to improve QoS.
CO4: Summarize transport layer protocols and congestion controls methods.
CO5: Describe various application layer services.
CO6: Implement and Analyze cryptographic and security techniques.

Time: Three Hours

Maximum Marks: 100

Answer all the Questions:-

PART A (10 x 2 = 20 Marks)

(Answer not more than 40 words)

- | | | |
|---|-----|-------------------|
| 1. Name two commonly used network protocols. | CO1 | [K ₁] |
| 2. List any four examples for a guided transmission media. | CO1 | [K ₁] |
| 3. What is the purpose of flow control in data communication? | CO2 | [K ₃] |
| 4. Compare the advantages of sliding window protocols over Stop and Wait protocols. | CO2 | [K ₂] |
| 5. Outline the key features of IPv6 and its advantages over IPv4. | CO3 | [K ₂] |
| 6. Discuss the concept of routing tables in distance vector routing in Communication network. | CO3 | [K ₂] |
| 7. Show how multiplexing contributes to efficient data transmission. | CO4 | [K ₂] |
| 8. Rephrase and write the purpose of the Domain Name System in the application layer. | CO5 | [K ₂] |
| 9. Identify a situation where the use of public and private keys is crucial for secure data exchange. | CO6 | [K ₃] |
| 10. Write the formula of decryption algorithm in RSA. | CO6 | [K ₂] |

Answer any FIVE Questions:-

PART B (5 x 16 = 80 Marks)

(Answer not more than 400 words)

11.	a)	Compare and contrast the advantages and disadvantages of different network topologies such as star, bus, and ring. Provide real-world examples of where each topology might be used.	10	CO1	[K ₂]
	b)	Summarize, how do switches, routers, and gateways contribute to the overall network infrastructure?	6	CO1	[K ₂]
12.	a)	Discuss the role of bridges in LANs, their advantages, and how they improve network performance and manage traffic.	9	CO2	[K ₂]
	b)	Describe the dual-ring architecture in FDDI and its role in providing fault tolerance.	7	CO2	[K ₂]
13.	a)	Interpret the various key QoS parameters and how they contribute to network performance.	8	CO3	[K ₂]
	b)	Explain Link State Routing algorithm differs. What are the advantages of it?	8	CO3	[K ₂]
14.	a)	Compare and contrast UDP with TCP, highlighting scenarios where UDP is preferred.	8	CO4	[K ₂]
	b)	Discuss the advantages and challenges associated with implementing Differentiated services and Integrated services.	8	CO4	[K ₄]
15.	a)	Outline a detailed overview of Hypertext Transfer Protocol and its role in web communication.	8	CO5	[K ₂]
	b)	Elaborate the functions and operation of Simple Mail Transfer Protocol in email communication.	8	CO5	[K ₂]
16.	a)	Encrypt plaintext 9 using the RSA public-key encryption algorithm. Use prime numbers 7 and 11 to generate the public and private keys.	8	CO6	[K ₃]
	b)	Describe the Diffie-Hellman algorithm for key exchange in asymmetric key cryptography with an example.	8	CO6	[K ₂]
