

**III B.Tech II Semester Regular Examinations, April - 2016**  
**COMPUTER NETWORKS**  
 (Common to CSE and IT)

Time: 3 hours

Max. Marks: 70

- Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)  
 2. Answering the question in **Part-A** is compulsory  
 3. Answer any **THREE** Questions from **Part-B**

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**PART -A**

- |   |  |      |
|---|--|------|
| 1 | a) Explain in detail about the MAN.                          | [4M] |
|   | b) Discuss briefly about the multilevel multiplexing.        | [3M] |
|   | c) What is Piggybacking? Explain the advantage of it.        | [3M] |
|   | d) Explain in detail about the Broadcasting.                 | [4M] |
|   | e) Discuss in detail about the Manchester Encoding.          | [4M] |
|   | f) Explain in detail about the HTTP Response Message format. | [4M] |

**PART -B**

- |   |  |      |
|---|--|------|
| 2 | a) Explain in detail about the Novell Network.   | [8M] |
|   | b) Discuss how Internet has revolutionized many aspects of our daily lives                                   | [8M] |
| 3 | a) Explain in detail about the statistical time division multiplexing  | [8M] |
|   | b) Compare and contrast a circuit-switched network and a packet-switched network                             | [8M] |
| 4 | a) What are the services provided to the Network Layer by Data Link Layer? Explain.                          | [6M] |
|   | b) Given 1101011011 data frame and generator polynomial $G(x) = x^4 + x + 1$ . Derive the transmitted frame. | [5M] |
|   | c) Explain in detail about the Simplex protocol for Noisy channel.   | [5M] |
| 5 | a) Describe in detail about the Frequency Division Multiple Access.  | [8M] |
|   | b) Explain briefly about the shortest path routing algorithm.  | [8M] |
| 6 | a) Explain in detail about the Physical layer in the Fast Ethernet.  | [8M] |
|   | b) Discuss briefly about the MAC layers in the 802.11 standard.  | [8M] |
| 7 | a) Explain in detail about the Client and Server in World Wide Web.  | [8M] |
|   | b) Describe briefly about the HTTP Operational Model.  | [8M] |



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**PART -A**

- 1 a) Write a short note on ARPANET. [4M]
- b) Compare and contrast a circuit-switched network and a packet-switched network. [4M]
- c) Describe the significance of error detection and error correction mechanisms in data link layer. [3M]
- d) Explain in detail about the Time division Multiple Access. [4M]
- e) Write a short note on Medium Access Control. [3M]
- f) Explain the need of Uniform Resource Locator in WWW. [4M]

**PART -B**

- 2 a) Explain different Layers and their functionalities in TCP/IP Model. [8M]
- b) Discuss in detail about the LAN and WAN. [8M]
- 3 a) Explain briefly about the applications of FDM [4M]
- b) Explain in detail about the synchronous time division multiplexing. [6M]
- c) Explain in detail about the Efficiency and Delay in Datagram Networks. [6M]
- 4 a) Explain in detail about the sliding window protocol using Selective Repeat. [8M]
- b) Give a brief note on the Multilink Point to point protocol. [8M]
- 5 a) Explain how slotted aloha improves the performance of pure aloha. [6M]
- b) Discuss briefly about the token passing. [4M]
- c) What is Count to infinity problem? Explain with suitable example. [6M]
- 6 a) Compare HDLC Frame with the LLC and MAC frame formats. [8M]
- b) Explain in detail about the addressing mechanism in 802.11. [8M]
- 7 a) Explain briefly about the Architecture of WWW. [8M]
- b) What are the different request types available in HTTP? Explain. [8M]



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**PART -A**

- 1 a) Explain briefly about the Novell Networks. [4M]
- b) What is the role of the address field in a packet traveling through a datagram network? Explain. [4M]
- c) What is the need of Framing? Explain. [3M]
- d) Compare and contrast the differences between broadcast routing and multicast routing. [3M]
- e) Explain in detail about the Logical Link Control. [4M]
- f) Discuss the HTTP Generic Message format. [4M]

**PART -B**

- 2 a) Compare OSI Reference Model with the TCP/IP Model. [8M]
- b) Differentiate LAN, MAN and WAN network topologies. [8M]
- 3 a) What is Frequency Division Multiplexing? Explain Multiplexing process in Frequency Division Multiplexing with a suitable example. [8M]
- b) What are the two phases required in the Setup phase in Virtual Circuit? Explain. [8M]
- 4 a) Explain briefly about one-bit sliding window protocol. [8M]
- b) Explain in detail about the point-to-point protocol frame format. [8M]
- 5 With a suitable example explain Distance Vector Routing algorithm. What is the serious drawback of Distance Vector Routing algorithm? Explain. [16M]
- 6 a) What are the common Standard Ethernet implementations? [8M]
- b) Explain the fields in the 802.11 Frame Structure. [8M]
- 7 a) What is the use of Uniform Resource Locator for the Client? Explain. [8M]
- b) Give a brief note on Wireless application protocol. [8M]

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**PART -A**

- 1 a) Explain in detail about the LAN. [4M]
- b) Compare synchronous time division multiplexing with statistical time division multiplexing [3M]
- c) Compare and contrast flow control and error control. [3M]
- d) Discuss the drawbacks of flooding and distance vector routing algorithms. [4M]
- e) Explain maximum and minimum frame lengths in Ethernet. [4M]
- f) Discuss in detail about the HTTP Request Message format. [4M]

**PART -B**

- 2 a) What are the different Layers in the OSI Reference Model? Explain the Functionalities of each Layer. [12M]
- b) Give a brief note on MAN. [4M]
- 3 a) What is multiplexing? Explain the basic format of multiplexed system. [6M]
- b) Explain in detail about the Wavelength Division Multiplexing. [6M]
- c) Discuss briefly about the multiple slot allocation. [4M]
- 4 a) What is the problem in Go-Back-N protocol? How it can be solved. [8M]
- b) Draw and explain HDLC frame format. [8M]
- 5 a) Write a short note on Fast Ethernet. [8M]
- b) Describe in detail about the Hierarchical routing. [8M]
- 6 a) Explain in detail about the 802.3 MAC frame format and its fields. [8M]
- b) What are the common Fast Ethernet implementations? [8M]
- 7 a) Give a brief note on the HTTP Transaction. [8M]
- b) What are the different Status Codes available in HTTP? Explain. [8M]

