

Code No: RT32053

R13

SET - 1

III B. Tech II Semester Regular/Supplementary Examinations, April - 2017

**COMPUTER NETWORKS**

(Common to Computer Science Engineering and Information Technology)

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) | Define Arpanet                  | [4M] |
|   | b) | What is multiplexing            | [3M] |
|   | c) | What is active document         | [3M] |
|   | d) | Define Ten-Gigabit Ethernet     | [4M] |
|   | e) | What is fixed size framing      | [4M] |
|   | f) | What is multicast and broadcast | [4M] |

**PART -B**

- |   |    |  |      |
|---|----|--|------|
| 2 | a) | Define different Network Topologies.   | [7M] |
|   | b) | Explain about WAN, LAN, MAN in details.  | [9M] |
| 3 | a) | Explain different types of switching techniques along with their advantages and disadvantages. | [8M] |
|   | b) | Explain the frequency division multiplexing with a suitable example.                           | [8M] |
| 4 | a) | Explain the frame format and transition phases of PPP.   | [8M] |
|   | b) | Compare various sliding window protocols of data link layer.                                   | [8M] |
| 5 | a) | Why there is no need for CSMA/CD on a full-duplex Ethernet LAN? Explain.                       | [8M] |
|   | b) | Explain the working of Carrier Sense Multiple Access protocol.                                 | [8M] |
| 6 | a) | Briefly discuss about the addressing mechanism of IEEE 802.11.                                 | [8M] |
|   | b) | Discuss in detail about standard Ethernet.   | [8M] |
| 7 | a) | What is a URL and explain about its components.  | [9M] |
|   | b) | Explain about HTML with its functionalities.   | [7M] |

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**PART -A**

- |   |    |   |      |
|---|----|---|------|
| 1 | a) | What is the difference between LAN and WAN? | [5M] |
|   | b) | Define virtual circuit?                     | [4M] |
|   | c) | What is URL?                                | [3M] |
|   | d) | Discuss about go back N protocol?           | [3M] |
|   | e) | What is variable size framing?              | [4M] |
|   | f) | What is channelization?                     | [3M] |

**PART -B**

- |   |    |   |      |
|---|----|---|------|
| 2 | a) | What is network architecture? What is layered architecture? Explain design issues for the layers? | [7M] |
|   | b) | List the similarities and dissimilarities between OSI & TCP/IP reference models. ?                | [9M] |
| 3 | a) | Explain how TDM works. Why statistical time division multiplexing is more efficient than TDM?     | [5M] |
|   | b) | What is multiplexing? In what situations it can be used?  | [5M] |
|   | c) | Compare and contrast TDM, STDM and FDM?   | [6M] |
| 4 | a) | What is meant by PPP? Discuss about framing and transmission phase in it. ?                       | [8M] |
|   | b) | Explain the working of stop- and- wait flow control protocol. ?                                   | [8M] |
| 5 | a) | Explain TDMA with a suitable example?   | [7M] |
|   | b) | What is meant by random access method? Give examples of random access protocols. ?                | [9M] |
| 6 | a) | Explain about Manchester encoding with a suitable example?  | [8M] |
|   | b) | Explain the Fast Ethernet MAC sub layer. ?  | [8M] |
| 7 | a) | What is WEB Documents? Explain with its categories?   | [9M] |
|   | b) | Explain about proxy server in detail?   | [7M] |

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**PART -A**

- |   |    |   |      |
|---|----|---|------|
| 1 | a) | Explain about BUS topology ?  | [4M] |
|   | b) | Define frame relay ?  | [3M] |
|   | c) | Define WWW?   | [2M] |
|   | d) | List various services provided by data link layer to network layer. ? | [4M] |
|   | e) | What is ALOHA?  | [5M] |
|   | f) | What is addressing?   | [4M] |

**PART -B**

- |   |    |  |       |
|---|----|--|-------|
| 2 | a) | What is internet? Explain birth of internet. ?   | [6M]  |
|   | b) | Explain OSI reference model and compare it with TCP/IP. ?  | [10M] |
| 3 | a) | How the message switching implemented in circuit switching networks?<br>Explain with an example                | [8M]  |
|   | b) | Discuss briefly about virtual circuit networks?  | [8M]  |
| 4 | a) | Describe the services provided by PPP protocol. Also, list some services<br>which does PPP does not provide. ? | [9M]  |
|   | b) | Give the frame structure of HDLC. Explain each field. ?  | [7M]  |
| 5 | a) | What is channelization? Explain various channelization protocols. ?  | [7M]  |
|   | b) | List the differences between a unicast, multicast and broadcast address. ?                                     | [9M]  |
| 6 | a) | Discuss in detail about fast Ethernet. ?   | [8M]  |
|   | b) | What are the common Fast Ethernet implementations? Give the purpose of<br>NIC?                                 | [8M]  |
| 7 | a) | What is WEB Documents? Explain with its categories?  | [9M]  |
|   | b) | Explain about HTTP Request Message Format ?  | [7M]  |

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**PART -A**

- |   |    |   |      |
|---|----|---|------|
| 1 | a) | What is internet?                                 | [2M] |
|   | b) | Give examples for frequency division multiplexing | [4M] |
|   | c) | What is switching?                                | [4M] |
|   | d) | What is framing?                                  | [4M] |
|   | e) | What is unicast?                                  | [4M] |
|   | f) | Define Gigabit Ethernet?                          | [4M] |

**PART -B**

- |   |    |   |      |
|---|----|---|------|
| 2 | a) | What is Open Systems Interconnect (OSI) reference model? What are the principles used in defining the OSI layers. ?       | [8M] |
|   | b) | Explain different network topologies. ?   | [8M] |
| 3 | a) | Distinguish between FDMA and TDMA?  | [7M] |
|   | b) | Explain the concept of multiplexing. Why is multiplexing more cost effective?   | [9M] |
| 4 | a) | Discuss about the configuration and control fields of HDLC. ?   | [5M] |
|   | b) | Discuss about unrestricted simplex protocol. ?  | [6M] |
|   | c) | What is framing? Why it is implemented in Data Link Layer?  | [6M] |
| 5 | a) | Discuss about code division multiple access?  | [8M] |
|   | b) | What is meant by vulnerable period? Show that the vulnerable time period of slotted ALOHA is half of the pure ALOHA?      | [8M] |
| 6 | a) | What are the advantages of dividing an Ethernet LAN with a bridge? Give the relationship between a switch and a bridge. ? | [8M] |
|   | b) | Discuss in detail about standard Ethernet?  | [8M] |
| 7 | a) | Explain about HTTP Response Message Format?   | [7M] |
|   | b) | Explain about static document & dynamic document?   | [9M] |

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