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BMS College of Engineering, Bangalore-560019

(Autonomous Institute, Affiliated to VTU, Belgaum)

January 2017 Semester End Make Up Examinations

Course: Computer Networks
Course Code: 16CS5DCCON

Duration: **3 hrs**
Max Marks: **100**

Date: 11.01.2017

Instructions: 1. Answer any five full questions choosing one from each unit.
2. Assume missing data (if any) suitably

UNIT 1

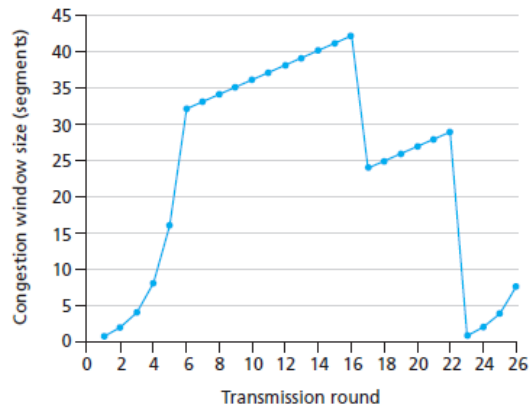
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|---|----|--|----|
| 1 | a) | Discuss HTTP response message format with a neat diagram. | 05 |
| | b) | Analyze the need for cookies and illustrate the different components of cookies with a neat diagram for an HTTP request. | 07 |
| | c) | Discuss the importance of proxy server with a neat diagram. | 08 |

UNIT 2

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| 2 | a) | Illustrate with an example how hierarchy of DNS servers are involved in Internet Directory service. | 05 |
| | b) | Suppose a client wants to establish multiple connections to the same web server using port number 80 and another client needs to connect to the same server, demonstrate the communication process for the above scenario with the neat diagram. | 05 |
| | c) | Develop a client-server program by using TCP/IP sockets, to make client sending the file name and the server to send back the number of words in the requested file if present. | 10 |

UNIT 3

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| 3 | a) | Discuss the UDP segment structure with an example for creating a checksum for the data. | 06 |
| | b) | With a pseudo code explain the events involved in reliable data transfer. | 06 |
| | c) | Consider Figure below. Assuming TCP Reno is the protocol experiencing the behavior shown. Answer the following questions. In all cases, justify your answer. | 08 |
| | | a. Identify the intervals of time when TCP slow start is operating. | |
| | | b. After the 22nd transmission round, is segment loss detected by a triple duplicate ACK or by a timeout? | |
| | | c. What is the value of ssthresh at the 18th transmission round? | |
| | | d. During what transmission round is the 70th segment sent? | |



UNIT 4

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| 4 | a) Illustrate with a scenario of the network that consists of Four Senders, Routers with Finite Buffers and Multihop Paths the principle of congestion control. | 07 |
| | b) Discuss the switching techniques inside a router. | 06 |
| | c) Discuss the approach of Network assisted congestion control with a scenario. | 07 |

OR

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| 5 | a) With a scenario explain the Network layer functions. | 08 |
| | b) With an FSM explain the components of an algorithm for TCP congestion control. | 08 |
| | c) Illustrate with a neat diagram Head-of-the line blocking at an input queued switch. | 04 |

UNIT 5

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| 6 | a) Explain with a neat diagram IPV4 datagram format. | 08 |
| | b) With a DHCP client server scenario explain the steps involved in client server interaction. | 08 |
| | c) Explain the importance of UPnP in NAT. | 04 |

OR

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| 7 | a) With an algorithm explain the Distance vector Routing Protocol. | 10 |
| | b) Discuss a link-state protocol that uses flooding of link-state information and a Dijkstra least-cost path algorithm. | 10 |
