Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_



**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

**End Semester Examination – April/May– 2017**

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| **Code :** | **14CS2007** | **Duration :** | **3hrs** |
| **Sub. Name :** | **COMPUTER NETWORKS** | **Max. marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| Q. No. | Sub Div. | Questions | Course  Outcome | Marks |
| 1. | a. | Tabulate the variuos physical media with short description of each. | CO1 | 10 |
| b. | Compare and contrast packet switching and circuit switching. | CO3 | 10 |
| (OR) | | | | |
| 2. | a. | Point out various delays experienced by the internet. | CO1 | 10 |
| b. | Describe the layers in TCP/IP protocol with neat sketch. | CO1 | 10 |
| 3. | a. | Distinguish HTTP persistent connecction and non-persistent connection. | CO3 | 5 |
|  | b. | Demonstrate that web caching reduces latency in web applications. | CO2 | 10 |
|  | c. | List and explain FTP commands and replies. | CO1 | 5 |
| (OR) | | | | |
| 4. | a. | Suppose that client A initiates a telnet session with server S. At about the same time, another client B also initiates a telnet session with the same server S. Provide possible source and destination port numbers for  i. The segment from A to S.  ii. The segment from B to S.  iii. The segment sent from S to A.  iv. The segment sent from S to B.  v. If A and B are different hosts, is it possible that the source port number in the segments from A to S be the same as that from B to S?  vi. How about if they are the same host? | CO3 | 10 |
|  | b. | Refer to the exhibit. Identify the application layer protocols involved in the places denoted by 2 & 6. Briefly discuss these protocols. | CO2 | 10 |
| 5. | a. | Assess and compare the performance of Go-Back-N protocol with Selective Repeat protocol. | CO3 | 10 |
|  | b. | Justify the simpler format of UDP header with neat sketch. | CO1 | 5 |
|  | c. | Is it possible for an application to enjoy reliable data transfer even when theapplication runs over UDP? Justify. | CO2 | 5 |
| (OR) | | | | |
| 6. | a. | Describe the format of TCP Segment header format with neat sketch. | CO1 | 10 |
|  | b. | Compute network address, range of usable address and the broadcast address for the following:   1. 198.162.16.66 /26 2. 129.23.4.0 3. 2.68.16.76 /30 4. 190.7.7.1 /10 | CO2 | 8 |
|  | c. | What is congestion control? | CO1 | 2 |
| 7. | a. | Summarize the dual stack and tunneling methods for the interoperability of IPv4 and IPv6. | CO3 | 10 |
|  | b. | Suppose that there are three routers between a source host and a destination host. Ignoring fragmentation, an IP datagram sent from the source host to the destination host will travel over how many interfaces? How many forwarding tables will be indexed to move the datagram from the source to the destination? | CO2 | 4 |
|  | c. | Compare and contrast link-state and distance-vector routing algorithms. | CO1 | 6 |
| (OR) | | | | |
| 8 | a. | Describe the procedure to dynamically assign IP address to the hosts by the DHCP server with example. | CO1 | 10 |
|  | b. | Compare and contrast the IPv4 and the IPv6 header. Do they have any fields in common? If so, list them. | CO2 | 10 |
|  | | **Compulsory:** |  |  |
| 9. | a. | A bit stream 101110 is transmitted using the standard CRC method. The generator polynomial is 1001. Show how the CRC code bits are formed and is used to validate the bit stream.Suppose if the third bit from the left is inverted during its transmission explain how this error is detected at the receiver’s end. | CO2 | 10 |
|  | b. | Summarize the categories of protocols in Channel partitioning MAC and Random access MAC protocols. | CO3 | 10 |

ALL THE BEST