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 – Nov/Dec– 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. |  | With a neat sketch describe the layers in OSI model and explain how packets are being send from Sender to Receiver? | CO1 | 20 |
| (OR) | | | | |
| 2. | a. | Compare and contrast packet switching and circuit switching. | CO3 | 10 |
| b. | Point out various delays experienced by the internet. Calculate the delay in sending a packet from Host A to Host B of length1,000 bytes propagated over a link of distance 2,500 km with propagation speed 2.5 x 108 m/s, and transmission rate 2 Mbps. | CO3 | 10 |
|  |  |  |  |  |
| 3. | a. | Demonstrate that web caching reduces latency in web applications. | CO2 | 10 |
|  | b. | With a neat sketch discuss how persistent connection is established. Distinguish HTTP persistent connection and non-persistent connection. | CO3 | 10 |
| (OR) | | | | |
| 4. |  | Consider a scenario where a user Alice, with a Web-based e-mail account (such as Hotmail or Gmail), sends a message to another user Bob, who accesses his mail from his mail server using any mail access protocol. How does the message get from Alice’s host to Bob’s host? Distinguish various mail access protocols. | CO2 | 20 |
|  |  |  |  |  |
| 5. | a. | Describe the TCP Segment header format with neat Sketch. | CO1 | 10 |
|  | b. | Suppose Host A sends two TCP segments back to back to Host B over a TCP connection. The first segment has sequence number 90; the second has sequence number 110.   1. Compute how much data is in the first segment? 2. Suppose that the first segment is lost but the second segment arrives at B. Evaluate the acknowledgment number if segment is send from Host B to Host A? | CO1 | 10 |
| (OR) | | | | |
| 6. | a. | Describe the procedure to dynamically assign IP address to the hosts by the DHCP server with example. | CO1 | 10 |
|  | b. | Compare and contrast link-state and distance-vector routing algorithms | CO1 | 10 |
|  |  |  |  |  |
| 7. | a. | Assess and compare the performance of Go-Back-N protocol with Selective Repeat protocol. | CO3 | 10 |
|  | b. | Compute network address, range of usable address CLASS and the broadcast address for the following:  i. 195.168.166.166 /25 ii. 129.23.4.0 iii. 250.168.166.176 /30 iv. 153.67.12.1 /10 | CO2 | 10 |
| (OR) | | | | |
| 8. |  | Describe Distance Vector Routing Protocol (DVR) in detail. Also, demonstrate the best path from the source node **‘u’** to the destination node ‘**z**’ using DVRP. | CO3 | 20 |
|  | | **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 are 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. | With a neat sketch explain the working of CSMA/CD protocol. | CO2 | 10 |

ALL THE BEST