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 :** | **14CS3024** | **Duration :** | **3hrs** |
| **Sub. Name :** | **INTERNETWORKING** | **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. | Explain with the example the role DNS. List and discuss the various flags involved the header structure of the DNS. | CO1 | 10 |
| b. | Consider a host sun that is to be configured as a router. With suitable examples discuss the various routing decisions to be deployed in the router sun, to successfully relay the incoming datagrams. | CO1 | 10 |
| (OR) | | | | |
| 2. | a. | Consider an organization’s network with address 210.100.56.0. There are six departments require six subnets to be created each subnet with 30 usable hosts. Design a subnetting system and answer the following:   1. Default subnet mask 2. Custom subnet mask 3. Total number of subnets 4. Network and broadcast address of each subnet 5. Range of usable IP addresses in each subnet | CO1 | 10 |
| b. | List and explain the various ICMP messages with their type and code. | CO1 | 10 |
| 3. | a. | Explain the working principle and packet formats of RIP version 1 with suitable diagrams. | CO3 | 10 |
|  | b. | Explain the role of IGMP in creating and maintaining multicast groups with the necessary header structures. | CO1 | 10 |
| (OR) | | | | |
| 4. | a. | Explain a dynamic routing protocol and its packet formats, used for the exchange of routing information among different routers in an autonomous system. | CO2 | 10 |
|  | b. | Suppose a TCP connection is transferring a file of 5,000 bytes. The first byte is numbered 10,001. What are the sequence numbers for each segment if data are sent in five segments, each carrying 1,000 bytes? | CO3 | 5 |
|  | c. | Describe the three way handshake protocol to close a TCP connection with a neat sketch. | CO3 | 5 |
| 5. | a. | Draw and explain the TCP state transition diagram. | CO3 | 10 |
|  | b. | Explain the protocol used by a diskless system to know its IP address when it is bootstrapped. | CO1 | 10 |
| (OR) | | | | |
| 6. | a. | Consider an FTP client Gemini which wants to transfer a file to the host bsdi. Discuss the various steps involved in this transaction and explain the header structure used by the protocol that converts the IP address of the destination bsdi into hardware address in this proces | CO1 | 10 |
|  | b. | Discuss the various SNMP message formats exchanged between a network manager and a network element. | CO2 | 10 |
| 7. | a. | Assume that the user X is chatting with user Y. The user Y is not faster enough to receive the message and to give the acknowledgement. Explain with neat timeline diagram how the Nagle algorithm can improve the performance of the above said chat application. | CO3 | 10 |
|  | b. | Explain the simultaneous open and simultaneous close with a neat sketch. | CO3 | 10 |
| (OR) | | | | |
| 8. | a. | Discuss the LDP in MPLS control plane and the LDP messages with necessary diagrams. | CO4 | 10 |
|  | b. | Discuss the role of Ingress, Core and Egress LSRs in MPLS data forwarding with neat sketch. | CO4 | 10 |
|  | | **Compulsory:** |  |  |
| 9. | a. | Explain the silly window syndrome in TCP data transmission with suitable examples. | CO3 | 10 |
|  | b. | Describe the drawback of AAL5 in internetworking ATM with MPLS and explain how the VC/VP merging process solves this problem. | CO4 | 10 |

ALL THE BEST