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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| **Sub. Code:** | **14CS3013** | **Duration :** | **3hrs** |
| **Sub. Name :** | **MPLS AND VPN** | **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. | Describe some of the drawbacks that you might encounter when using  traditional IP routing. | CO1 | 3 |
| b. | Describe the functionality of an Edge-LSR. | CO1 | 5 |
| c. | Refer to the exhibit    Route a packet from San Jose POP router to the New York POP router through MPLS network. The MPLS network comprises of San Fransisco, Dallas and Washington core router. | CO1 | 12 |
| (OR) | | | | |
| 2. | a. | What are the two modes of MPLS network? | CO3 | 2 |
| b. | Describe the format of an MPLS label header. | CO3 | 8 |
| c. | What is Penultimate Hop Popping and how does it speed up the label lookup process? | CO3 | 10 |
| 3. | a. | Differentiate ordered and independent mode of operation. | CO3 | 5 |
|  | b. | Explain the encapsulation process of MPLS packets in Ethernet Link | CO3 | 7 |
|  | c. | How does a Trace route work across an MPLS network. | CO3 | 8 |
| (OR) | | | | |
| 4. | a. | List the challenges faced in designing cell mode MPLS network. | CO2 | 8 |
|  | b. | Narrate the various terminologies used in cell mode MPLS networks. | CO2 | 8 |
|  | c. | Tabulate the difference between cell mode and frame mode MPLS. | CO2 | 4 |
| 5. |  | Sketch the architecture of VPN and briefly describe each components. | CO3 | 20 |
| (OR) | | | | |
| 6. | a. | List various VPN topologies. | CO4 | 8 |
|  | b. | Differentiate Overlay and Peer to Peer model. | CO4 | 12 |
| 7. | a. | How can overlapping IP addresses be supported between customer sites whenMPLS VPN is deployed? | CO4 | 8 |
|  | b. | What is a route target? Justify the need of Route target in MPLS/VPN. | CO4 | 12 |
| (OR) | | | | |
| 8. | a. | What is a route distingusher? Why is it used? | CO4 | 10 |
|  | b. | How are client VPN routes distributed across the service provider P network? | CO4 | 10 |
|  | | **Compulsory:** |  |  |
| 9. | a. | When running OSPF PE CE, how many layers of routing hierarchy arenecessary? | CO4 | 4 |
|  | b. | How are routing loops prevented between sites when running OSPF PE CE? | CO4 | 10 |
|  | c. | Which feature is necessary to allow VPN sites to run the same autonomoussystem number? | CO4 | 6 |

ALL THE BEST