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



**End Semester Examination – Nov / Dec – 2019**

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| **Code :** | **17CS2042** | **Duration :** | **3hrs** |
| **Sub. Name :** | **INTERNET ROUTING ARCHITECTURE** | **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 the origin and evolution of the Internet. | CO1 | 10 |
| b. | Describe the four router arbiter projects for routing administration. | CO1 | 10 |
| **(OR)** | | | | |
| 2. | a. | Discuss the different services, technical characteristics and service level agreements offered by Internet Service Provider. | CO1 | 12 |
| b. | Consider a network topology with the following requirements. Compute the addressing scheme that supports classless addressing when the class C network address 211.23.7.0 is given for the assignment. | CO2 | 8 |
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| 3. | a. | Compare and contrast Distance vector and Link state routing protocols. | CO3 | 10 |
| b. | Elaborate on IPv6 addressing and different IPv6 address types. | CO2 | 10 |
| **(OR)** | | | | |
| 4. | a. | Discuss the ways by which the segregating the network into an autonomous system results in a more manageable network. | CO2 | 10 |
| b. | List the four types of BGP message types and sketch their header formats. | CO3 | 10 |
|  |  |  |  |  |
| 5. |  | Elaborate on the four categories of BGP path attributes. Discuss each of these attributes that are part of BGP UPDATE message with example. | CO5 | 20 |
| **(OR)** | | | | |
| 6. | a. | Discuss how redundancy, symmetry and load balancing can be ensured for single-homing and multi-homing networks. | CO4 | 10 |
| b. | Brief on the route filtering and manipulation of BGP attributes. | CO5 | 10 |
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| 7. |  | Illustrate the methods by which large scale autonomous systems are managed when network has fully meshed BGP peers. | CO4 | 20 |
| **(OR)** | | | | |
| 8. |  | Discuss the factors that affect route instabilities on the Internet and explain the BGP tools for building core stability on the Internet. | CO4 | 20 |
|  | | **Compulsory**: |  |  |
| 9. | a. | Explain and apply the configuration of all the routers to establish BGP peering sessions for the below given network topology. Use OSPF as an IGP to establish the required underlying connectivity internally. | CO6 | 10 |
| b. | Demonstrate the different methods of BGP 4 aggregation that can be applied on the routers with configuration commands. | CO6 | 10 |