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

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**End Semester Examination – Nov/Dec – 2018**

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| **Code :** | **14CS3008** | **Duration :** | **3hrs** |
| **Sub Name:** | **ANALYSIS, ARCHITECTURE AND DESIGN OF 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. | Discuss Service Characteristics and Performance Characteristics in detail. | CO1 | 10 |
| b. | Which of the following applications require best-effort (unpredictable and unreliable), guaranteed (predictable and reliable, with accountability), or predictable service. Give reasons for your choices.   * + 1. High-quality (phone company-grade) voice calls     2. Voice over IP (VoIP) calls     3. File transfers via FTP     4. Audio file downloads     5. A commercial video-on-demand service | CO2 | 10 |
| (OR) | | | | |
| 2. | a. | Describe about the requirement specification map. | CO2 | 10 |
| b. | Differentiate mission-critical, rate-critical, real-time and non-real time applications. Give examples for each type of applications. | CO2 | 10 |
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| 3. | a. | What are the various measures of availability of your network? Given an MTBCF requirement of 8000 hours and an MTTR requirement of 4 hours, calculate an availability requirement. | CO3 | 10 |
| b. | Elaborate on the various steps in gathering and listing requirements from the user. | CO1 | 10 |
| (OR) | | | | |
| 4. | a. | Describe in detail flowspec algorithm. | CO1 | 10 |
| b. | Define flows in Network analysis. With neat diagrams and examples elucidate all the flow models. |  | 10 |
|  |  |  |  |  |
| 5 | a. | Define component architecture. Tabulate the primary functions of component architecture, its description capability and an example subset of mechanisms used to achieve capability. | CO1 | 10 |
| b. | What are the differences between the LAN/MAN/WAN and Access/Distribution/ Core architectural models? Under what conditions might each be applied to a network? | CO2 | 10 |
| (OR) | | | | |
| 6. | a. | Refer to the exhibit. Given Class C address is 192.168.10.0. Apply Subnetting concept and assign IPs to all the users of each network.  1 | CO2 | 10 |
| b. | Describe the following,   1. Supernetting 2. Private Addressing 3. NAT | CO2 | 10 |
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| 7. | a. | For each of the SNMP commands *get, get-next,* and *set,* describe what each command does and give an example. | CO3 | 5 |
| b. | Write description of ping, tracert and pathping commands and discuss the output of these commands. |  | 5 |
| c. | Describe about the various network management mechanisms. | CO3 | 10 |
|  |  | (OR) |  |  |
| 8. | a. | Refer to the performance requirements listed here.  Requirement 1: A requirement to bill subscribers for network service and to provide accounting of subscriber billing information  Requirement 2: Combining a customer's voice and data traffic over a common network  Explain why performance mechanisms are needed to support the requirement. | CO2 | 10 |
| b. | What is in-band and out-of-band data? With various network management mechanisms how are they managed in a network? | CO1 | 10 |
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|  | | **Compulsory**: |  |  |
| 9 | a. | Define Network Security. What is the need of developing a security and privacy plan? Discuss the two important components in preparing for security. What are the assets and potential threats to be analyzed to protect your network? Draw a sample threat analysis worksheet for a specific organization. | CO2 | 10 |
| b. | Discuss the vendor, equipment, and service provider evaluations. | CO1 | 10 |