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 – 2016**

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|  |  | **Semester :** | **2016-17 ODD** |
| **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.  i.High-quality (phone company-grade) voice calls  ii.Voice over IP (VoIP) calls  iii.File transfers via FTP  iv.Audio file downloads  v.A commercial video-on-demand service | CO2 | 10 |
| (OR) | | | | |
| 2. | 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. | CO2 | 10 |
| b. | Differentiate mission-critical, rate-critical, real-time and non-real time applications. Give examples for each type of applications. | CO1 | 10 |
| 3. | a. | Identify the suitable flow model for the following scenarios.  i.Users on the Internet accessing the same Web server  ii.Forty workstations processing batch jobs overnight, managed by a central mainframe  iii.Email use across the Internet  iv.A transaction-processing application, authorizing credit card transactions between a company's retail stores and its headquarters | CO1 | 10 |
|  | b. | How will you prioritize flows in your network? Discuss. | CO1 | 10 |
| (OR) | | | | |
| 4. | a. | Elucidate the working principles of the three different architectural models. | CO1 | 10 |
|  | b. | Differentiate Systems and Network architecture. Why do you need to develop systems architecture in the process of developing a network architecture? | CO1 | 10 |
| 5. | a. | Find network address and the broadcast address of the following hosts.  i.192.168.166.166 /25  ii.127.23.4.0  iii.192.168.166.166 /30  iv.23.67.12.1 /10  v.10.10.10.20 | CO2 | 10 |
|  | b. | Discuss some of the popular mechanisms for addressing networks. | CO2 | 10 |
| (OR) | | | | |
| 6. | a. | Refer to the exhibit. Discuss Link state Routing algorithm. Find a best path from the source node D to all possible destination.  http://www.mvankleij.nl/wp-content/uploads/2013/03/Topology-LS.png | CO1 | 10 |
|  | b. | With suitable examples, elucidate various routing strategies for your network. | CO2 | 10 |
| 7. | a. | Imagine as a network engineer you need to plan for various performance mechanisms for your highly secure private network. Discuss all performance mechanisms that enhances your network quality. | CO2 | 10 |
|  | b. | What are the various security mechanisms appropriate for your college network environment? Explain. | CO3 | 10 |
| (OR) | | | | |
| 8. | a. | List any three popular network monitoring tools available for network management. Describe the merits and demerits of each of the tool. | CO3 | 10 |
|  | b. | 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 |
|  | | **Compulsory:** |  |  |
| 9. | a. | What are the primary differences between first-order, second-order, and third order design products? | CO1 | 10 |
|  | b. | What are network blueprints, network diagrams, and component plans? Why would a network design have sets of each of these? | CO2 | 10 |

ALL THE BEST