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PRESIDENCY UNIVERSITY BENGALURU

SCHOOL OF ENGINEERING

MAKU UP EXAMINATION – JULY 2024

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|  | **Date : 18/07/2024** |
| **Course Code : CSE2011** | **Time : 01:30 PM - 04:30 PM** |
| **Course Name : Data Communication and Computer Networks** | **Max Marks : 100** |
| **Program : B.Tech** | **Weightage : 50%** |

**Instructions:**

1. *Read all questions carefully and answer accordingly.*
2. *Question paper consists of 3 parts.*
3. *Scientific and non-programmable calculator are permitted.*
4. *Do not write any information on the question paper other than Roll Number.*

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| **PART A** | | | |
| **ANSWER ANY 5 QUESTIONS 5Q X 2M=10M** | | | |
| 1 | List all the seven layers of ISO/OSI model | (CO 1) | [Knowledge] |
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| 2 | Explain Client Server Architecture and Peer-to-peer architecture in brief | (CO 1) | [Knowledge] |
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| 3 | List some services of network layer. | (CO 2) | [Knowledge] |
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| 4 | Explain Border Gateway protocol | (CO 2) | [Knowledge] |
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| 5 | What are the functionalities of Data-link Layer? | (CO 3) | [Knowledge] |
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| 6 | Define the different types of data flows. | (CO 4) | [Knowledge] |
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| 7 | Differentiate between analog and digital signals. | (CO 4) | [Knowledge] |
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| **PART B** | | | |
| **ANSWER ANY 5 QUESTIONS 5Q X 10M=50M** | | | |
| 8 | List the characteristics of UDP protocol and also explain UDP segment structure with a neat diagram. | (CO 1) | [Comprehension] |
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| 9 | Explain the working of Go Back N ARQ. | (CO 1) | [Comprehension] |
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| 10 | Change the following IP addresses from dotted-decimal notation to binary and identify to which class it belongs to:   1. 192.168.1.10 2. 10.10.200.6 3. 245.20.230.4 4. 172.15.165.1 5. 230.10.65.30 | (CO2) | [Application] |
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| 11 | Explain Ethernet with advantages and disadvantages. Differentiate between switch and router. | (CO 3) | [Comprehension] |
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| 12 | Illustrate and explain the components of Dynamic Host Configuration Protocol | (CO 3) | [Comprehension] |
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| 13 | Define Data Communication. Explain the characteristics and components of data communication in detail. | (CO 4) | [Comprehension] |
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| 14 | Illustrate and explain performance parameters of data communication networks. | (CO 4) | [Comprehension] |
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| **PART C** | | | |
| **ANSWER ANY 2 QUESTIONS 2Q X 20M=40M** | | | |
| 14 | Calculate the shortest path using link state algorithm, considering source-node ***u*** and source-node ***w***. | (CO2) | [Application] |
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| 15 | A bit stream 10011101 is transmitted using the standard CRC method. The generator polynomial is x3+1.  a. What is the actual bit string transmitted?  b. Suppose the fourth bit from the left is inverted during transmission. How will receiver detect this error? | (CO3) | [Application] |
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| 16 | Compare and contrast the IPv4 and IPv6 header formats. Provide a detailed analysis including a clear diagram for each format to illustrate their structures and differences. | (CO2) | [Application] |
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