| **Register**  **Number** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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**SRM Institute of Science and Technology** 

**College of Engineering and Technology**

**School of Computing**

SRM Nagar, Kattankulathur – 603203, Chengalpattu District, Tamil Nadu

**Academic Year: 2021-22 (Even)**

Test: CLA-T1 Date: 06-04-2022 Course Code & Title: 18CSS202J - Computer Communications Duration: 1 Hour Year & Sem: II Year / IV Sem Max. Marks: 25

**Course Articulation Matrix:**

Set - C

| **S.No.** | **Course**  **Outcome** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | CO1 | 3 | - | - | - | - | - | - | - | - | - | - | 3 |
| 2 | CO2 | 3 | 2 | 3 | - | - | - | - | - | - | - | - | 3 |
| 3 | CO3 | 3 | 3 | 3 | - | - | - | - | - | - | - | - | 3 |
| 4 | CO4 | 3 | 2 | - | - | - | - | - | - | - | - | - | 3 |
| 5 | CO5 | 3 | - | - | - | - | - | - | - | - | - | - | 2 |
| 6 | CO6 | 3 | 3 | 3 | - | - | - | - | - | - | - | - | 3 |

| Part - A  (15 x 1 = 15 Marks)  Instructions: 1) Answer ALL questions. 2) The duration for answering the part A is 20 minutes (this sheet will be collected after 20 minutes). 3) Encircle the correct answer (if more than one is right answer encircle appropriately) | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| Q.  No | Question | Marks | BL | CO | PO | PI  Code |
| 1 | Source node X and Destination Y are inter-connected through three intermediate routers. Determine how many times each packet will reach the network layer, the data link layer and the Phy Layer during transmission at an instance from X to Y.  a. N/W Layer - 3; D/L Layer 6; Physical Layer 6 b. N/W Layer - 5; D/L Layer 8; Physical Layer 8 c. N/W Layer - 4; D/L Layer 7; Physical Layer 7 d. N/W Layer - 3; D/L Layer 3; Physical Layer 3 **Answer: b** | 1 | L2 | 1 | 1 | 1.6.1 |
| 2 | The sequence value which is used to check the integrity of data is appended by which layer?  a. MAC Layer b. Physical Layer  c. Transport Layer d. Presentation Layer **Answer: a** | 1 | L2 | 1 | 1 | 1.6.1 |
| 3 | Datagram and virtual circuit approaches are the categories of \_\_\_\_\_\_\_\_\_  a. Packet Switching b. Circuit Switching  c. Message Switching d. Line Switching  **Answer: a** | 1 | L1 | 1 | 1 | 1.6.1 |
| 4 | A software engineer wants to develop security algorithm using encryption. Which OSI layer protocols will help him to develop the security algorithm?  a. Application Layer b. Presentation Layer c. Transport Layer d. Network Layer **Answer: b** | 1 | L3 | 1 | 1 | 1.6.1 |

| 5 | There are five devices connected using mesh topology and simplex transmission. How many cables are needed? How many ports are needed for each device?  a. 20 cables, 8 Ports b. 20 cables, 10 Ports c. 10 cables, 4 Ports d. 10 cables, 10 ports **Answer: b** | 1 | L3 | 2 | 1 | 1.3.1 |
| --- | --- | --- | --- | --- | --- | --- |
| 6 | To interface a modem with computer terminal, the physical layer standard required is  a. RS 424-A b. RS232C  c. Centronic interface d. Standard parallel port. **Answer: b** | 1 | L2 | 1 | 1 | 1.6.1 |
| 7 | Pick up the odd one out from the followings with respect to application layer  a. Network virtual terminal  b. Mail service  c. Directory service  d. Connection control  **Answer:d** | 1 | L3 | 1 | 1 | 1.6.1 |
| 8 | Which address is responsible to ensure process to process communication  a. IPv4 Address b. IPv6 Address  c. Port Address d. MAC Address  **Answer: c** | 1 | L1 | 1 | 1 | 1.6.1 |
| 9 | Choose the correct order for the following identifiers: a. Email Address; Port Address; IP Address; MAC Address  b. MAC Address; Port Address; IP Address; Email Address  c. Email Address; IP Address; MAC Address; PORT Address  d. IP Address; MAC Address; PORT Address; Email Address  **Answer: a** | 1 | L2 | 1 | 1 | 1.6.1 |
| 10 | Select the PDU which have Data from application layer and been appended with the layer 4 header  a. Packet b. Frame  c. Signal d. Segment  **Answer: a** | 1 | L1 | 1 | 1 | 1.6.1 |
| 11 | A communication between a computer and a keyboard involves \_\_\_\_\_\_\_\_\_\_\_\_ duplex transmission.  a. simplex  b. half duplex  c. full duplex  d. semi-duplex  **Answer: a** | 1 | L2 | 1 | 1 | 1.6.1 |
| 12 | If Address resolution protocol (ARP) request is broadcast,an reply is  a. universal  b. unicast  c. multicast  d. generated locally  **Answer: b** | 1 | L3 | 1 | 1 | 1.6.1 |
| 13 | In Address resolution protocol (ARP) packet encapsulated directly in to a  a. data link integer  b. network frame  c. network station  d. data link frame  **Answer: d** | 1 | L1 | 1 | 1 | 1.6.1 |

| 14 | Which protocol works at the transport layer provides connectionless service between hosts?  a. UDP b. TCP  c. ARP d. IP  **Answer: a** | 1 | L2 | 1 | 1 | 1.6.1 |
| --- | --- | --- | --- | --- | --- | --- |
| 15 | If a host broadcasts a frame containing a source MAC address and a destination address and its purpose is to assign an IP address, what network layer protocol is the host using?  a. TCP b. ARP  c. RARP d. IPX  **Answer: c** | 1 | L2 | 1 | 1 | 1.6.1 |

| **Register**  **Number** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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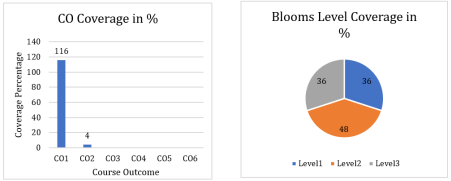
Set - C

| Part – B  (2 x 5 = 10 Marks)  Instructions: Answer ANY two questions | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| Q.  No | Question | Marks | BL | CO | PO | PI  Code |
| 16 | Draw the architecture of TCP/IP protocol suite and discuss how does it differ from the OSI layered architecture  **TCP/IP protocol suite**  ✓ Most widely used interoperable network protocol architecture | 5 | L2 | 1 | 1 | 1.6.1 |

|  | ✓ Specified and extensively used before OSI  ✓ OSI was slow to take place in the market  ✓ Funded by the US Defense Advanced Research Project Agency (DARPA) for its packet switched network (ARPANET)  ✓ DoD (Department of Defense) automatically created an enormous market for TCP/IP  ✓ Used by the Internet and WWW  ✓ Actually TCP/IP reference model has been built on its protocols  ✓ That is why that reference model is only for TCP/IP protocol suite and this is why it is not so important to assign roles to each layer in TCP/IP; understanding TCP, IP and the application protocols would be enough  Difference between TCP/IP model and OSI layered Architecture |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 17 | How do you classify computer networks? Explain with neat sketches  ✓ Networks can be classified based on  ▪ Size or scale  ▪ Structure / Functional Relationship and  ▪ Topology / Physical Connectivity  ✓ By Size or Scale  ▪ Local Area Network (LAN)  ▪ Metropolitan Area Network (MAN)  ▪ Wide Area Network (WAN)  ▪ Personal Area Network (PAN)  ✓ By Structure / Functional Relationship  ▪ Client / Server  ▪ Peer to Peer (P2PN)  ▪ By Topology / Physical Connectivity, BUS, STAR, RING, MESH, TREE, Hybrid | 5 | L3 | 1 | 2 | 2.6.4 |
| 18 | Explain the addresses used in the TCP/IP protocol and how its related to TCP/IP architecture. (With neat sketch) ✓ Four levels of addresses are used in an internet employing the TCP/IP protocols  ▪ Physical address  ▪ Logical address  ▪ Port address and  ▪ Application-specific address  ✓ Each address is related to a one layer in the TCP/IP architecture, as shown in the following Figure. | 5 | L1 | 1 | 1 | 1.6.1 |

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**Course Outcome (CO) and Bloom’s level (BL) Coverage in Questions**

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