| **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 - B

| **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 | The main characteristics of Computer Networks is A. Resource Sharing  B. Disk Sharing  C. File Sharing  D. Document Sharing  **Answer: A** | 1 | L1 | 1 | 1 | 1.6.1 |
| 2 | The first operational Computer Network was \_\_\_ A. CNET  B. ARPANET  C. DARPANET  D. NSYNET  **Answer: B** | 1 | L1 | 1 | 1 | 1.6.1 |
| 3 | Within a small geographical area, \_\_\_ connects end users with computers.  A. SAN  B. MAN  C. LAN  D. WAN  **Answer: C** | 1 | L2 | 1 | 2 | 2.6.3 |
| 4 | The point-to-point circular link which connects end devices together is called as \_\_\_  A. Mesh Topology  B. LAN Topology  C. Tree Topology  D. Ring Topology  **Answer: D** | 1 | L3 | 2 | 2 | 2.6.3 |

| 5 | In \_\_\_ network, more than two devices share a link A. Point-to-Point  B. Multi-Point  C. Primary  D. Secondary  **Answer: B** | 1 | L2 | 1 | 1 | 1.6.1 |
| --- | --- | --- | --- | --- | --- | --- |
| 6 | Which of the following are examples for simplex transmission?  A. Communication between computer and Keyboard B. Television broadcasting  C. WLAN  D. Bluetooth  **Answer: A, B** | 1 | L2 | 1 | 1 | 1.6.1 |
| 7 | Examples for serial data transmission are \_\_\_  A. RS232C  B. Connection between a computer and a printer C. ASCII Characters  D. DVI (Digital Visual Interface)  **Answer: A, C** | 1 | L1 | 1 | 2 | 2.6.3 |
| 8 | The network topology confirms \_\_\_\_\_\_\_\_ of the underlying communication network  A. Structure or Layout  B. File  C. Server  D. Storage  **Answer: A** | 1 | L3 | 2 | 2 | 2.6.3 |
| 9 | The OSI stands for\_\_\_\_  A. Open System Internet  B. Open System Interface  C. Open System Intranet  D. Open System Interconnection  **Answer: D** | 1 | L1 | 1 | 1 | 1.6.1 |
| 10 | Service to the end user is provided by \_\_\_\_\_\_\_ layer A. Transport Layer  B. Session Layer  C. Application Layer  D. Presentation Layer  **Answer: C** | 1 | L2 | 1 | 2 | 2.6.3 |
| 11 | Match the following  1. Router i) Data Link Layer  2. Hub ii) Network Layer  3. Switch iii) Protocol Converter  4. Gateway iv) Physical Layer  A. 1 – ii, 2 – iv, 3 –i and 4 - iii  B. 1 - iii, 2 – iv, 3 – ii and 4 – i  C. 1 – iv, 2 – iii, 3 – i and 4 -ii  D. 1 – i, 2 – iii, 3 – ii and 4 – iv  **Answer: A** | 1 | L3 | 1 | 2 | 2.6.3 |
| 12 | Match the following  1. Port Address i) Data Link Layer 2. Logical Address ii) Transport Layer 3. Physical Address iii) Application Layer 4. Application specific Address iv) Network Layer  A. 1 – iv, 2 – iii, 3 – ii and 4 – i  B. 1 – iii, 2 – iv, 3 –ii and 4 -i  C. 1 – ii, 2 – iv, 3 – i and 4 – iii  D. 1 – ii, 2 – iii, 3 – iv and 4 - i  **Answer: C** | 1 | L3 | 1 | 2 | 2.6.3 |

| 13 | This layer is not part of the TCP/IP model but present in the OSI model  A. Network Layer B. Transport Layer C. Application Layer D. Session Layer  **Answer: D** | 1 | L2 | 1 | 1 | 1.6.1 |
| --- | --- | --- | --- | --- | --- | --- |
| 14 | What is the length of Physical Address (Ethernet) in bits? A. 32 bits B. 48 bits  C. 64 bits D. 16 bits  **Answer: B** | 1 | L2 | 1 | 2 | 2.6.3 |
| 15 | The main function of Transport Layer is \_\_  A. Process– to – Process delivery of messages  B. Node – to – node delivery of messages  C. Updating routing tables  D. Maintenance of routing tables  **Answer: A** | 1 | L2 | 1 | 1 | 1.6.1 |

| **Register**  **Number** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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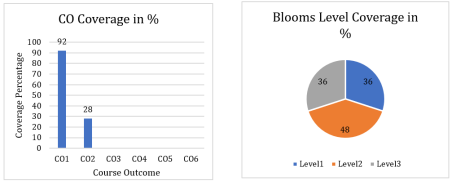
Set - B

| Part – B  (2 x 5 = 10 Marks)  Instructions: Answer ANY two questions | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| Q.  No | Question | Marks | BL | CO | PO | PI  Code |
| 16 | You have been given with 4 PCs, 2 Laptops, a Switch and a router. Construct two Local Area Networks (LAN A and LAN B) as per the following topologies and draw the configurations of the scenarios  a. LAN A should have 2 PCs and 1 Laptop connected with a switch. Connect the end devices with a switch using Star Topology. (1 Mark)  ✓ LAN A - Diagram for Star Topology – 2 PCs & a Laptop connected with a switch  b. Lab B has 2 PCs and a Laptop connected with a Router. Connect the end devices with a Ring Topology. (1 Mark)  ✓ LAN B - Diagram for Ring Topology – 2 PCs & a Laptop connected with a Router  c. Discuss the pros and cons of the above two topologies (3 Marks) | 1+1+3 | L2 | 2 | 1 | 1.6.1 |

|  | ***Star Topology***  **Pros**  **Cons**  ✓ High speed  ✓ High maintenance  ✓ Highly scalable  ✓ High dependency on  network  the central device  ✓ Highly efficient  ✓ Expensive  ✓ Centralized network  ✓ Requires additional  management  equipment  ***Ring Topology***  **Pros**  **Cons**  ✓ Fast Execution  ✓ Quite Expensive  ✓ Better Administration  ✓ Slow Activity Rate  ✓ Straightforward  ✓ Unprotected use  Adaptability  ✓ Fidelity of network  ✓ Need for Hardiness |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 17 | Distinguish between TCP/IP and OSI Layered architectures **Sl.**  **OSI Model TCP/IP Model**  **No.**  1 OSI model has been  It was developed by  developed by ISO  ARPANET (Advanced  (International  Research Project Agency  Standard  Network).  Organization).  2 n this model, the  In this model, the session and  session and  presentation layer are not  presentation layers are  different layers. Both layers  separated, i.e., both the  are included in the  layers are different.  application layer.  3 In this model, the  The network layer provides  network layer provides  only connectionless service  both connection  oriented and  connectionless service.  4 It consists of 7 layers. It consists of 4 layers. 5 The usage of this  This model is highly used.  model is very low.  TCP/IP doesn’t have any  6 OSI model provides a  clear distinguishing points  clear distinction  between services, interfaces,  between interfaces,  and protocols.  services, and protocols.  7 OSI refers to Open  TCP refers to Transmission  Systems  Control Protocol.  Interconnection. | 5 | L3 | 1 | 2 | 2.6.4 |
| 18 | Describe the significances of the following addresses a. Physical Address (2 Marks)  ✓ It is basically the address of any particular node that has been described by the LAN or WAN.  ✓ It is embedded in the Network Interface Card (NIC) in the node. It is also called as “Link Address” or “MAC Address”. | 2+2+1 | L1 | 1 | 1 | 1.6.1 |

|  | ✓ It unique locally.  ✓ The format and size of this address will vary depending on the network. Example: Ethernet has 48- bit MAC  b. Logical Addresses (2 Marks)  ✓ Logical address is required to facilitate universal communication in which different types of the physical networks can be involved.  ✓ In a universal addressing system, every single host will be recognized individually, regardless of any fundamental physical network.  ✓ The logical address is also called the IP (Internet Protocol) address.  ✓ Example: IP address (32-bit)  c. In which layers of OSI model, are they used? (1 Mark) ✓ Data Link  ✓ Network Layer |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |

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

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