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**CIS 202 11/10/18**

1. **OSI Model Matching (2 pts ea.)**  
     
   Name the layer described.

| **Layer** | **Description** |
| --- | --- |
| **Session Layer** | Offers simplex, half duplex, and full duplex to systems to communicate |
| **Presentation Layer** | Translates data formats and provides coding and conversion functions |
| **Network Layer** | Manages device addressing, tracks location of devices, determines best path |
| **Data Link Layer** | Only comes into play when user access to the network is needed |
| **Transport Layer** | Segments and reassembles data into a data stream |
| **Data Link Layer** | Adds a customized header containing the destination and source address |

1. **Binary/Hex Conversion (2 pts ea.)**  
     
   Complete the table.

| **Decimal Value** | **Binary Value** | **Hexadecimal Value** |
| --- | --- | --- |
| 10 | **1010** | **A** |
| 15 | **1111** | **F** |
| 3 | **0011** | **3** |
| 224 | **1110 0000** | **E0** |
| 255 | **1111 1111** | **FF** |

1. **Device Matching (2 pts ea.)**  
     
   Indicate the device that matches the device type.  
   Four possible device types - **hub**, **bridge**, **switch**, **router**

| **Description** | **Device Type** |
| --- | --- |
| Uses hardware addresses to filter the network. | **Switch** |
| Creates one collision domain and one broadcast domain. | **Hub** |
| Breaks up broadcast domains and uses logical address to filter the network. | **Router** |
| Breaks up collision domains by creating one large broadcast domain. | **Switch** |

1. **Connection oriented vs. connectionless (2 pts ea.)**  
     
   Indicate whether each protocol is **connection oriented** or **connectionless**.

|  |  |
| --- | --- |
| UDP | **Connectionless** |
| TCP | **Connection-oriented** |
| IP | **Connectionless** |
| DHCP | **Connectionless** |
| FTP | **Connection-oriented** |

1. **Fill in the blank (2 pts ea.)**
   * You can run full-duplex Ethernet with just about any device except a **Hub**.
   * **Fiber Optic** cable is not susceptible to EMI.
   * The three layers in the Cisco hierarchical model are the **Access** , **Distribution**, and **Core** layers.
   * The term **Collision**.domain describes a network collection of devices in which one particular device sends a packet to a network segment, forcing every other device on that same segment to pay attention to it.
   * On a **Broadcast** domain, a set of all devices on the network segment hear all broadcasts sent on that segment.
   * An octet is made up of **8** bits.
   * Which type cable would you use to connect a PC to a switch, a crossover or straight-through cable? **Straight-Through**
   * Routers are defined at the **Network** layer of the OSI model.
2. **DoD Host-to-Host or Internet layer protocols (2 pts ea.)**  
     
   Indicate whether each protocol is **Host-Host** or **Internet**.

|  |  |
| --- | --- |
| UDP | **Host to Host** |
| ICMP | **Internet** |
| IP | **Internet** |
| TCP | **Host to Host** |
| ARP | **Internet** |

1. **IP Addressing (2 pts ea.)**  
     
   Complete the table.

| **Class** | **Default Subnet Mask** | **Private Address Range** |
| --- | --- | --- |
| A | **255.0.0.0** | **10.0.0.0 - 10.255.255.255** |
| B | **255.255.0.0** | **172.16.0.0 - 172.31.255.255** |
| C | **255.255.255.0** | **192.168.0.0 - 192.168.255.255** |

1. **Process/Application layer protocols (2 pts ea.)**  
     
   Indicate the process or application described.

|  |  |
| --- | --- |
| Allows you to login into a remote host and run program | **Telnet** |
| Connectionless file transfer program | **TFTP** |
| Connection -oriented service for transferring files | **FTP** |
| Used to send email | **SMTP** |
| Used to receive email | **IMAP / POP3** |
| Assigns IP addresses dynamically to PCs | **DHCP** |