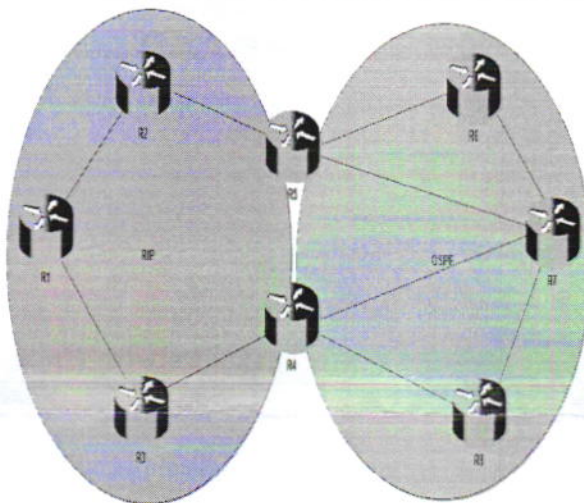




4	<p><u>Encryption Techniques</u>-encryption is the process of encoding a message or information in such a way that only authorized parties can access it and those who are not authorized cannot. Encryption does not itself prevent interference, but denies the intelligible content to a would-be interceptor. In an encryption scheme, the intended information or message, referred to as plaintext, Ex- symmetric <b>encryption</b>  Data <b>Encryption</b> Standard (DES),  Advanced <b>Encryption</b> Standard (AES), Blowfish,  Twofish are all <b>examples</b> of symmetric algorithm</p>	Explanati on 4 Example 2	6	6
5	<p>Most networks you encounter will probably only run a single routing protocol like OSPF or EIGRP. Maybe you find some old small networks that are still running RIP that need migration to OSPF or EIGRP. What if you have a company that is running OSPF and you just bought another company and their network is running EIGRP?</p> <p>It's possible that we have multiple routing protocols on our network and we'll need some method to exchange routing information between the different protocols. This is called <b>redistribution</b>.</p> <ul style="list-style-type: none"> <li>•1. Company departments are administered by different terms, and multi-vendor equipment, and this will lead to such situations.</li> <li>•2. Network administrators may intentionally create separate routing instances to filter routes, limit reachability and enforce policies.</li> </ul> <p>As you should know, every router within a routing instance is typically running the same routing protocol to fully share reachability information, but by default, this routing information cannot be exchanged with routers in other routing instances.</p> <p>Have a look at the following diagram:</p>	Explanati on - 3 example - 3	6	6





In the diagram above, we have two routing instances, RIP and OSPF. Routers in the RIP instance do not have visibility of the addresses and subnets prefixes in the OSPF instance and vice versa. What is the solution to allow the exchange of routing information between those two different routing instances?

Here comes the role of a new feature called “**Router Redistribution**” OR “**RR**”. In the above scenario, in order to let routers in the RIP learn the prefixes in the OSPF instance, routers 4 and 5 need to run both RIP and OSPF processes and to inject the OSPF routes into RIP instance.

6	<p>Cisco Router Hardware Cisco Systems began as a small startup in a San Francisco 1984. Its founders were researchers at Stanford University who devised a "gateway server" to connect computers from different departments. Cisco Systems 'first generation of products were known as gateway servers, and the product line had four iterations:(2 marks)</p> <p>Cisco 1600/1600-R small office stub LAN/WAN access router is Cisco's current IOS supported entry-level modular router. . The 1600 series uses the Motorola 68030 processor, running at 33MHz .</p> <p>Cisco 2500 series is quite extensive; there are 32 different models. The 2500s, are mostly used as small stub or end-node access routers for LAN-to-WAN access. This series supports IOS 10.x and higher.</p> <p>The 2600 series was intended to be a modular replacement for the 2500 series. It has a single 10-BaseT Ethernet interface and slots for two WICs and one</p>	2	6	6
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Explain any two series  
2\*2=4

	<p>expansion slot (for ATM, async and sync serial, and so on). It requires IOS 11.3 or higher. The 2600 also supports Voice over IP (VoIP).</p> <p>The 3600 series routers (3620 and 3640) were the first of the third generation modular routers. The 3620 has two expansion slots, and the 3640 has four. They are based on the IDT R4700 processors running at 80MHz/16,000PPS and 100MHz/40,000PPS. Both require Internetwork Operating System (IOS) 11.1 or higher.</p> <p>The 4000s (4000, 4500-M, 4700, 4700-M) were the first generation of modular routers. . They support up to 18 Ethernet interfaces, 6 Token Ring, 2 Fast Ethernet, 2 FDDI, 1 HSSI, 34 Async Serial, 16 Sync Serial, and ATM. They run IOS 9.14 and higher.</p> <p>The 7x00 (7000, 7200, and 7500) series routers make up Cisco's high-end router line, and were Cisco's first generation of high-end routers. The 7000 and 7010 originally used separate route and switch (interface) processors. They now use a single processing unit called a Route Switch Processor (RSP. The 7200 series routers are the mid-line enterprise routers that use PCI bus architecture. The 7500 is the high end. The 7x00 series routers 'processing speed is determined by the speed of the RSP (7000 and 7500) provides hot swap capability and Layer 2 switching capabilities. The 7x00 routers utilize IOS 11.x and higher, depending on the model. Although it's not supported on every router platform, Cisco has a Layer 2 implementation .Some of them are.</p> <ul style="list-style-type: none"> <li>• Ethernet (10, 100, and 1,000Mbps)</li> <li>• Token Ring (4 and 16Mbps)</li> <li>• Asynchronous Serial (11,500Bps)</li> </ul>			
7	<p>Network Management Fundamentals.</p> <p>network management refers to the activities associated with running a network, along with the technology required to support those activities. A significant part of running a network is simply monitoring it to understand what is going on, but there are also other aspects.A network is a complex structure that requires a great deal of attention. It must be carefully planned. Configurations of network devices must be modified without adversely affecting the rest of the network. Failures in the network do occur and need to be detected, diagnosed, and repaired. Service levels that were guaranteed to customers and end users . <b>(4 marks)</b></p> <p>Network Management deals with</p>	4	6	6