

M.Sc. IT Semester III

VIRTUALIZATION

QUESTION BANK 2014 – 2015

Unit 1	
1.	What is virtualization? Explain the five stage virtualization process.
2.	What are the different types of virtualization? Explain desktop virtualization.
3.	What are the different types of virtualization? Explain network virtualization.
4.	What are the different types of virtualization? Explain Server virtualization.
5.	What are the different types of virtualization? Explain storage virtualization.
6.	What are the different types of virtualization? Explain operating system virtualization.
7.	What are the different types of virtualization? Explain application virtualization.
8.	What are the advantages and disadvantages of virtualization?
9.	Explain the taxonomy of virtual machine.
10.	What are process virtual machines? Explain.
11.	What are system virtual machines? Explain.
12.	Explain full virtualization and paravirtualization.
13.	What are hypervisors? Explain.
14.	Explain virtualization, virtual machine and virtual machine monitor.
15.	Compare process virtual machines and system virtual machines.
Unit 2 – Chapter 1	
16.	When should server virtualization be used? When should it not be used? Explain.
17.	Explain emulation, simulation and virtualization.
Unit 2 – Chapter 2	
18.	Explain Hardware partitioning.
19.	Explain software partitioning.
20.	What is application partitioning? Explain.
21.	Explain resource partitioning and service partitioning.
Unit 2 – Chapter 3	
22.	What are host servers, virtual machines and guest operating systems? Explain.
23.	Give an overview of the following virtual hardware: Processor, Memory, Hard Disk Drive
24.	Give an overview of the following virtual hardware: Floppy Disk Drive, DVD Drive, USB port
25.	Give an overview of the following virtual hardware: Network adapter, Serial port, Parallel port, Keyboard and Mouse
26.	Explain fixed disk file, dynamic disk file and differencing disk file and undo disk file.
Unit 2 – Chapter 4	
27.	How does virtualization solve business problems?
28.	What is server consolidation? How can organizations save money through server consolidation?
29.	Enumerate the reasons for existence of legacy systems in an organization.
30.	What is Disaster recovery? What is high availability? How can virtualization help in disaster recovery and high availability?
31.	What is adaptive computing? What is on-demand computing? Explain.
32.	What are the limitations of server virtualization? Explain.

Unit 2 – Chapter 6	
33.	List and explain the considerations to be taken into account while evaluation server virtualization platforms.
34.	Explain the 3 C's while selecting the hardware necessary for server virtualization deployment.
35.	Discuss the role of host servers in virtualization solution.
36.	What are common licensing schemes? How can they be adapted to virtualization?
37.	Discuss the supported and unsupported operating systems on VMWare GSX, VMWare ESX and Microsoft virtual Servers.
38.	What are the various support issues from vendors in virtualization? Explain.
39.	What are the reasons for unexpected server growth in server virtualization? How can this growth be combated?
40.	What is virtual machine density? Enumerate the factors to be considered to estimate virtual machine density.
41.	What are the data and system backup considerations to be taken into account during server virtualization?
42.	What are the monitoring and performance backup considerations to be taken into account during server virtualization?
43.	What are the processor and memory considerations to be taken into account during server virtualization?
44.	What are the disk I/O considerations to be taken into account during server virtualization?
45.	What are the network and security backup considerations to be taken into account during server virtualization?
46.	Give an outline of USE CASE document for server virtualization solution deployment. Enlist the questions which will help gather important information to build the Use Case Document
Unit 2 – Chapter 7	
47.	Compare Microsoft Virtual Server, VMWare GSX and VMWare GSX server virtualization technologies based on the following areas: Software maturity, Host and guest operating system support, Training and certification, Management and user interface, Ease of creating virtual machines, Hardware support
48.	Compare Microsoft Virtual Server, VMWare GSX and VMWare GSX server virtualization technologies based on the following areas: Technical Support, Performance, Price
49.	Discuss the selection of virtualization product (Microsoft Virtual Server, VMWare GSX and VMWare GSX server) for: Software development and test lab automation, Legacy application migration and rehosting, department and branch server consolidation.
50.	Discuss the selection of virtualization product (Microsoft Virtual Server, VMWare GSX and VMWare GSX server) for: Production data center consolidation, cost effective disaster recovery and high availability, guaranteed service level agreements.
51.	Explain the different hardware that can be seen by the guest operating systems hosted on Microsoft Virtual Server, VMWare GSX and VMWare GSX server.
Unit 3 – Chapter 2	
52.	What approach should be used to design campus networks? Explain.
53.	Discuss in detail the wide area network design.

54.	Explain the hierarchical architecture of wide area network.
55.	What are the advantages of dedicating routers for a specific function at the network core? Explain.
56.	What are the different ways to provide resiliency in wide area networks?
57.	What are the different routing challenges that must be considered for the type of wide area network service purchased? Explain.
58.	Explain the two main tasks to secure wide area networks.
Unit 3 – Chapter 4	
59.	What requirements are created for VN to provide private communication paths between members of a group over a shared network? How are these requirements achieved? OR What are the different planes of virtual separation?
60.	Explain forwarding information base and routing information base.
61.	What are the different ways in which service providers solve the problem of connecting devices with private paths over shared infrastructure? Explain any three.
62.	Explain generic routing encapsulation.
63.	Explain multiprotocol label switching.
64.	Explain the layer 2 Tunnel protocol version 3.
65.	What is multi-topology routing? Explain.
Unit 3 – Chapter 6	
66.	Explain HOP to HOP VLAN.
67.	Explain Layer 3 hop-to-hop segmentation technique.
68.	How are GRE tunnels viable in virtualization? Explain.
69.	Enumerate the considerations that must be made for the deployment of an IGP over GRE tunnels.
70.	What are virtual private lan services? What are its scalability limitations?
71.	Discuss the following MPLS-based Layer 2 VPN technologies: a) Ethernet over MPLS (EoMPLS) and b) Virtual Private LAN Services (VPLS)
72.	Discuss the migration of forwarding plane to multiprotocol layer switching.
73.	Enumerate the best practices for IGP and BGP deployment.
Unit 3 – Chapter 7	
74.	What are the common wide area network services offered by the providers? Explain.
75.	Explain the point to point generic routing encapsulation.
76.	Explain dynamic multipoint virtual private network.
77.	What are the different techniques of extending virtual networks over the wide area network? Explain.
78.	Explain multiprotocol layer switching over Layer 2 circuits for extending virtual networks over wide area networks. What are its benefits and drawbacks?
79.	How can contracting multiple IP virtual private networks be used for extending virtual networks over wide area networks? What are its benefits and drawbacks?
80.	How can carrier supporting carrier be used for extending virtual networks over wide area networks? What are its benefits and drawbacks?
81.	How can multiprotocol switching over generic routing encapsulation be used for extending virtual networks over wide area networks? What are its benefits and drawbacks?
82.	Explain virtual private networks over dynamic multipoint virtual private networks. What are its advantages and disadvantages?

Unit 3 – Chapter 9	
83.	Explain the different applications of multicast.
84.	What is Internet Group Management protocol? Define and explain query and report.
85.	What is protocol independent multicast protocol? What are its two modes of operation? Explain.
86.	What are multicast virtual routing and forwarding instances? What are the two main components while adding multicast functionality to a virtual routing and forwarding instance? Explain each.
87.	What are the different options to transport multicast traffic between virtual devices? Explain.
Unit 4 – Chapter 12	
88.	Explain the following terms associated with SCSI systems: Chain, HBA, SCSI ID, LUN, SCSI bus, Terminator, Target.
89.	What is the difference between SCSI ID and LUN? Explain.
90.	Explain the different SCSI bus types comparing bus width and bandwidth.
91.	What are the different categories of SCSI parallel interface? Explain.
92.	Why is SCSI required to be properly terminated? Where should it be terminated?
93.	What are the different types of SCSI terminators? Explain.
94.	What are the different considerations to be kept in mind while selecting cables for SCSI storage devices?
95.	Explain the advantages offered by Fibre Channel architecture. What are its disadvantages?
96.	What are the different types of fibre channel cables? Explain.
97.	Explain the different devices used in fibre channel SAN?
98.	Explain the different fibre channel network topologies.
99.	What is Zoning? Explain.
100.	Explain the different methods to connect fibre channel switches and routers.
101.	Compare FCIP and iFCP. How SAN can be extended using FCIP and iFCP?
102.	Explain the iSCSI architecture. How is iSCSI secured?
103.	Explain the three SAN backup types.
Unit 4 – Chapter 13	
104.	Explain the implementation of hardware and software raid.
105.	What is SNIA? Why is a model required for shared storage?
106.	Explain the classic storage model.
107.	Explain the SNIA storage model.
108.	What are the different goals of access controls? Where can unwanted access be prevented?
109.	Explain the services subsystem.
110.	Explain the different architectures for design of storage virtualization.
111.	How can fault tolerance be added to SAN?
112.	Explain Hierarchical storage management.
113.	What are virtual tape libraries? How are physical libraries divided? Write a short note on writing to magnetic disks.
Unit 5 – Chapter 1	
114.	What are blades? What are different types of blades? What are the advantages of implementing blade systems versus rack systems?
Unit 5 – Chapter 2	
115.	Discuss the different themes that apply to adaptation of blades and virtualization technologies.

116.	Discuss the eras of evolution of computing starting from mainframes to consolidation.
117.	Explain the evolution of storage technologies.
118.	What is clustering? Explain the evolution of clustering.
119.	Discuss the evolution of grid/utility computing.
120.	Explain the evolution of Windows and Unix server operating systems.
Unit 5 – Chapter 3	
121.	Discuss the blade and virtualization technology timeline.
122.	Give an account of history of blade server systems.
123.	How and when did virtualization originate? Give an account of history of virtualization.
124.	Discuss the market adaptation of blades and virtualization.
125.	Explain the usage of blade systems.
126.	Enumerate the benefits of blades and virtualization.
127.	What is data center in a box? What are its features?
Unit 5 – Chapter 4	
128.	What are the fundamental design objectives of blade server systems? Explain.
129.	State and explain the components of blade systems.
130.	Explain server blades, I/O modules and management modules.
Unit 5 – Chapter 12	
131.	What are the CPU consideration for blades?
132.	Discuss the memory and I/O considerations for blades.
133.	Explain the storage considerations for blades.