

IMSc IT (IMS & CS) Sem.-4 Examination

IMS-405

Principles of Virtualisation

May-2025

[Max. Marks : 70]

Time : 2-30 Hours]

Instructions:

- Figures to the right indicate Full Marks.
- Do not write anything on the question paper.

Q.1) Give the Full form of following terms (Any Five)**(5 Marks)**

- (1) RAID (2) IBM (3) VM (4) HP (5) SCSI (6) SAN (7) NAS

Q.2) Do as Directed (True/False) (Any Five)**(5 Marks)**

- (A) Virtualization in computing often refers to the abstraction of some physical component into a logical object.
- (B) The first mainstream virtualization was done on IBM mainframes in the 1960s.
- (C) Virtual Machine Monitor (VMM), which today is commonly called a hypervisor, is the software that provides the environment in which the VMs operate.
- (D) Microsoft Windows was developed during the 1980s primarily as a personal computer operating system.
- (E) Group of eight bits called one byte.
- (F) VMWare Workstation is Type-I Hypervisor.
- (G) Server virtualization is not a disruptive technology that not allows many logical computers to run on a single physical server.

Q.3) Fill in the gaps (Any Five)**(5 Marks)**

- (A) Hyper-V is a product of _____.
- (B) VMWare developed Virtualization Technology in the year _____.
- (C) An operating system which is install in virtual machine is called _____.
- (D) Full Form of ESXi is _____.
- (E) Oracle Virtual Box and Microsoft Virtual PC product are type ____ hypervisor.
- (F) Zen Sever is a product of _____.

Q.4) Answer the following (Attempt any Five)**(10 Marks)**

- (A) Give the name of the company which developed virtualization technology product.
- (B) What is Hypervisor?
- (C) What is Virtualization Technology?
- (D) Explain disadvantage of host machine.
- (E) Describe disadvantage of physical network.
- (F) Explain advantage of guest machine.
- (G) Describe disadvantage of host operating system.

(P.T.O)

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Q.5) Answer the following Multiple-Choice Questions: (Any Five) (05 Marks)

1. _____ are a combination of device drivers and processes that enhance the user experience with the VM, improve VM performance and help manage the virtual machine.
(A) Templating (B) Cloning (C) VMware Tools (D) None of above
2. A _____ packages information about the application's networking, availability and security requirements.
(A) Container (B) vApp (C) OpenStack (D) All of above
3. A _____ or _____ is a disk storage device that is connected to a computer through a dedicated storage network or through the NIC.
(A) DAS (B) SAN (C) NAS (D) RAID
4. The combination of Disk Mirroring and Disk Striping is referred to as _____ & _____.
(A) RAID 0 (B) RAID 1 (C) RAID 1+0 (D) RAID 0+1
5. _____ are prebuilt virtual machines that already contain everything needed to deploy an application.
(A) Image Builder (C) Container
(B) Server Consolidation (D) Virtual appliances
6. _____ are placed between the tiers to equalize traffic flow and redirect it in the event of a web server or application server failure.
(A) Virtual Appliance (C) Virtual Machine
(B) Load Balancer (D) High Availability
7. VMware uses _____ for use by the VMs that abstracts the physical storage so it is simpler to manage than if each VM had direct access to the storage array.
(A) Cluster Shared Volumes (C) Raw device mapping
(B) XFS (D) Virtual Machine File System

Q.6) Answer the following (Attempt any Two) (20 Marks)

- (A) Explain type of Virtualization in detail.
- (B) Describe Type-I and Type-II hypervisor in detail.
- (C) Explain Physical Infrastructure and Virtualization Infrastructure in detail.

Q.7) Answer the following (Attempt any Two) (20 Marks)

- (A) Explain the process of P2V conversion in detail.
 - (B) Explain the tuning practices for Virtual networks.
 - (C) Explain the working process of Virtual Machine in detail.
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