Enrollment No......................................

Faculty of Engineering
End Sem (Even) Examination May-2019
OE00017 Virtualization

Programme: B.Tech.   Branch/Specialisation: All

Duration: 3 Hrs.   **Maximum Marks: 60**

Note: All questions are compulsory. Internal choices, if any, are indicated.Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

Q.1   i.   What is the name of the software that lets you run multiple operating **1** systems on one physical server?
      (a) Processor   (b) Hypervisor
      (c) Thread   (d) Guest operating system

  ii.   Which of the following is not a Virtualization Level? **1**
      (a) File Management Level   (b) Fabric Level
      (c) Server Level   (d) Storage device Level

  iii.   An operating system running on a Type _____ VM is a full **1** virtualization.
      (a) Type 1   (b) Type 2   (c) Type 3   (d) All of these

  iv.   Which of the following type of virtualization is found in hypervisor **1** such as Microsoft's Hyper-V?
      (a) Paravirtualization   (b)   Full   virtualization
      (c) Emulation   (d) None of these

  v.   Virtual machines can communicate only with other virtual machine **1** across a_____
      (a) Internal Virtual Switch   (b) USB standard
      (c) Snapshots   (d) Virtual Switch

  vi.   Which of the following is used to automatically provide IP addresses **1** for both physical and virtual servers?
      (a) Templates
      (b) NIC teaming
      (c) Virtual Appliance
      (d) Dynamic host Configuration Protocol

vii. Which security measures should be adopted to prevent virtual **1**
machine (VM) theft?
(a) VM copy and move restrictions
(b) VM reservation
(c) Mutual client isolation
(d) Sandboxing of the guest OS

viii. Which parameters need to be configured to control the resources **1**
consumed by virtual machines?
(a) Share, Limit, and Reservation
(b) Threshold, Priority, and Share
(c) Reservation, Threshold, and Priority
(d) Limit, Reservation, and Threshold

ix. How does server virtualization make a data center more efficient? **1**
(a) By decreasing server utilization rates
(b) By increasing server utilization rates
(c) By reducing storage requirements
(d) It does not make a data center more efficient.

x. What is a reason for monitoring data center elements? **1**
(a) To ensure that the IT support staff performs efficiently
(b) To ensure that no data is lost if there is a disaster or service
disruption
(c) To eliminate threats to storage infrastructure security
(d) To determine that the components are available and functioning
properly

Q.2 i. Enlighten advantages and disadvantages of virtualization. **2**
ii. What is virtualization? Discuss the evolution of virtualization. **3**
iii. What are the different types of virtualization? Explain Server and **5**
desktop virtualization.
OR iv. Discuss with example the impact of virtualization on cloud services **5**
and Information technology infrastructure.

Q.3 i. Can hypervisors dynamically allocate memory to improve virtual **4**
machines performance? Justify.

ii. What is Hypervisor? Differentiate between "Type 1 Hypervisor" and **6**
"Type 2 Hypervisor".
OR iii. Explain the architecture of Kernel Virtual Machine and Microsoft **6**
Hyper-V.

Q.4 i. Give a Short note on storage usage in Virtual Machine. **2**
ii. Discuss the terms Containers and Virtual Machines with diagram. **3**
iii. Mention what are the different components used in Virtual Machine **5**
infrastructure.
OR iv. What are the virtual machine applications? Also explain Sequencing **5**
Life Cycle for creating a virtual application for streaming.

Q.5 Attempt any two:
i. What do you mean by virtual machine Cloning? Distinguish template **5**
and clone in VMware.
ii. What are the potential risks associated with virtual machine and **5**
provide its evasion.
iii. Write the short note on VM theft and Hyper Jacking. **5**

Q.6 i. Is "Data scale is driving data centre automation" Justify the answer. **2**
ii. What are the challenges for Data Centre Management? **3**
iii. State the process and benefits of automating the data centre. **5**
OR iv. What is the extensive goal for automating virtualization? **5**

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Marking Scheme
OE00017 Virtualization

Q.1 i. What is the name of the software that lets you run multiple operating **1** systems on one physical server?
(b) Hypervisor

ii. Which of the following is not a Virtualization Level? **1**
(a) File Management Level

iii. An operating system running on a Type _____ VM is a full **1** virtualization.
(a) Type 1

iv. Which of the following type of virtualization is found in hypervisor **1** such as Microsoft's Hyper-V?
(a) Paravirtualization

v. Virtual machines can communicate only with other virtual machine **1** across a_____
(a) Internal Virtual Switch

vi. Which of the following is used to automatically provide IP addresses **1** for both physical and virtual servers?
(d) Dynamic host Configuration Protocol

vii. Which security measures should be adopted to prevent virtual machine **1** (VM) theft?
(a) VM copy and move restrictions

viii. Which parameters need to be configured to control the resources **1** consumed by virtual machines?
(a) Share, Limit, and Reservation

ix. How does server virtualization make a data center more efficient? **1**
(b) By increasing server utilization rates

x. What is a reason for monitoring data center elements? **1**
(d) To determine that the components are available and functioning properly

Q.2 i. Advantages of virtualization   1 mark   **2**
Disadvantages of virtualization   1 mark

ii. Virtualization   1 mark   **3**
Evolution of virtualization.   2 marks

iii. Types of virtualization   1 mark   **5**

Server virtualization   2 marks
Desktop virtualization.   2 marks

OR iv. Impact of virtualization on cloud services and Information technology **5** infrastructure with example

Q.3 i. Can hypervisors dynamically allocate memory to improve virtual **4** machines performance?
Justification.

ii. Hypervisor   2 marks   **6**
Difference b/w Type 1 Hypervisor and Type 2 Hypervisor
4 marks

OR iii. Architecture of Kernel Virtual Machine   3 marks   **6**
Architecture of Microsoft Hyper-V.   3 marks

Q.4 i. Storage usage in Virtual Machine.   **2**

ii. Containers with diagram   1.5 marks   **3**
Virtual Machines with diagram.   1.5 marks

iii. Components used in Virtual Machine infrastructure.   **5**

OR iv. Virtual machine applications   2 marks   **5**
Sequencing Life Cycle for creating a virtual application for streaming
3 marks

Q.5 Attempt any two:

i. Virtual machine Cloning   2 marks   **5**
Distinguish template and clone in VMware.   3 marks

ii. Potential risks associated with virtual machine   3 marks   **5**
Provide its evasion.   2 marks

iii. VM theft   2.5 marks   **5**
Hyper Jacking.   2.5 marks

Q.6 i. Is "Data scale is driving data centre automation" Justify the answer. **2**
ii. Challenges for Data Centre Management? **3**
iii. Process and benefits of automating the data centre. **5**
OR iv. Extensive goal for automating virtualization? **5**

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