

Enrollment No.....



Faculty of Engineering  
End Sem (Even) Examination May-2022  
CS3EY04 Principle of Virtualisation  
Programme: B.Tech. Branch/Specialisation: CSE

**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. Which of the following is a type of virtualization? **1**  
 (a) Storage (b) Desktop  
 (c) CPU (d) All of these
- ii. Type ..... VM is full virtualization. **1**  
 (a) 1 (b) 2 (c) 3 (d) All of these
- iii. Which of the following is an example of a server operating system? **1**  
 (a) VMware (b) Virtual Disk  
 (c) VMware ESXi (d) VirtualBox
- iv. What are the Automation Levels on a DRS Cluster? **1**  
 (a) Manual, Partially Automatic, Fully Automatic  
 (b) Manual, Partially Automated, Fully Automated  
 (c) Manual, Semi Automated, Fully Automatic  
 (d) Manual, Semi-Automatic, Automatic
- v. VMware vSphere can be evaluated prior to purchase. What is the **1**  
 maximum number of days the evaluation can be used before a license  
 must be purchased?  
 (a) 30 Day (b) 60 Days (c) 90 Days (d) 120 Days
- vi. What protocol is used by an ESXi host to communicate with NAS **1**  
 devices?  
 (a) NFS (b) iSCSI (c) CIFS (d) SMB
- vii. The default security policy on a Port Group is: **1**  
 (a) Reject, Accept, Accept (b) Reject, Reject, Reject  
 (c) Accept, Accept, Accept (d) Reject, Reject, Accept

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- viii. Which vSphere feature provides dynamic allocation of storage capacity? **1**  
 (a) vStorage APIs / VCB (b) Thinapp  
 (c) sDRS (d) vStorage Thin Provisioning
- ix. To get the maximum performance benefits of vNUMA it is recommended to: **1**  
 (a) Make sure your clusters are composed entirely of hosts with matching NUMA architecture.  
 (b) Only use single vCPU virtual machines  
 (c) Enable EVC on your clusters  
 (d) Disable Hyper-Threading
- x. When is vNUMA enable by default on a virtual machine? **1**  
 (a) When a virtual machine has more than 8 vCPU's  
 (b) When the guestOS is configured using an SMP HAL  
 (c) All the time  
 (d) vNUMA is never enabled by default
- Q.2 i. What is need of virtualization? **2**  
 ii. What are challenges in virtualization? **3**  
 iii. Explain the different types of hypervisors with an appropriate sketch. **5**
- OR iv. Explain the difference before virtualization and after virtualization in computing environment. **5**
- Q.3 i. What is vSAN? **2**  
 ii. Elaborate VMware vSphere components and features. **8**
- OR iii. What types of services offered by vCenter? Explain the core services of vCenter. **8**
- Q.4 i. Explain the concept distributed power management. **3**  
 ii. Explain the concept distributed resource scheduler. Write down the functional description of DRS. **7**
- OR iii. Describe the concept of VM migration with respect to ESXi. How is VMware vMotion Used? Explain the key features of vMotion. **7**

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- Q.5 i. How do we protect our ESXi host? **4**  
 ii. Write and explain vSphere fault tolerance in detail. **6**
- OR iii. What are the management issues in VMware? **6**
- Q.6 Attempt any two:  
 i. Why optimization is important in virtualized environment. **5**  
 ii. Explain the CPU scheduler operation **5**  
 iii. Explain CPU performance metrics **5**

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## Marking Scheme CS3EY04 Principle of Virtualisation

Q.1	i.	Which of the following is a type of virtualization? (d) All of these	1
	ii.	Type ..... VM is full virtualization. (a) 1	1
	iii.	Which of the following is an example of a server operating system? (c) VMware ESXi	1
	iv.	What are the Automation Levels on a DRS Cluster? (d) Manual, Semi-Automatic, Automatic	1
	v.	VMware vSphere can be evaluated prior to purchase. What is the maximum number of days the evaluation can be used before a license must be purchased? (b) 60 Days	1
	vi.	What protocol is used by an ESXi host to communicate with NAS devices? (b) iSCSI	1
	vii.	The default security policy on a Port Group is: (a) Reject, Accept, Accept	1
	viii.	Which vSphere feature provides dynamic allocation of storage capacity? (c) sDRS	1
	ix.	To get the maximum performance benefits of vNUMA it is recommended to: (a) Make sure your clusters are composed entirely of hosts with matching NUMA architecture.	1
	x.	When is vNUMA enable by default on a virtual machine? (d) vNUMA is never enabled by default	1
Q.2	i.	Any three need of virtualization	2
	ii.	Any three challenges in virtualization 1 mark for each (1 mark * 3)	3
	iii.	Two types of hypervisors with sketch 2.5 marks for each (2.5 marks * 2)	5
OR	iv.	Any four difference before virtualization and after virtualization in computing environment.	5

Q.3	i.	Definition of vSAN	2
	ii.	VMware vSphere components Any five components 1 mark for each (1 mark * 5) 5 marks Features Three features 1 mark for each (1 mark * 3) 3 marks	8
OR	iii.	Any five types of services Core services of vCenter 4 marks	8
Q.4	i.	Concept distributed power management As per explanation	3
	ii.	Concept distributed resource scheduler 4 marks Functional description of DRS 3 marks	7
OR	iii.	Concept of VM migration with respect to ESXi 3 marks VMware vMotion Used 2 marks Key features of vMotion 2 marks	7
Q.5	i.	Three points protect our ESXi host	4
	ii.	vSphere fault tolerance As per the explanation	6
OR	iii.	Three issues management issues in VMware 2 marks for each (2 marks * 3)	6
Q.6		Attempt any two:	
	i.	Optimization 2 marks Important 3 marks	5
	ii.	CPU scheduler operation explanation 3 marks Steps 2 marks	5
	iii.	CPU performance metrics As per the explanation	5

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