**UNIVERSITY OF PETROLEUM AND ENERGY STUDIES**

**End Semester Examination, July 2020**

**Course:** Introduction to Virtualization & Cloud Computing   **Semester: VIII**

**Program:** B.Tech OGI, IT   **Time 03 hrs.**

**Course Code:** CSIB274   **Max. Marks: 100**

**Instructions:**

**SECTION A**

| S. No. | | Marks | CO |
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| Q 1 | I) Which of the following is another name for system virtual machine?<br>a) hardware virtual machine<br>b) software virtual machine<br>c) real machine<br>d) None of the mentioned<br><br>II) Which of the following provide system resource access to virtual machines?<br>a) VMM<br>b) VMC<br>c) VNM<br>d) All of the mentioned<br><br>III) Point out the correct statement :<br>a) A virtual machine is a computer that is walled off from the physical computer that the virtual machine is running on<br>b) Virtual machines provide the capability of running multiple machine instances, each with their own operating system<br>c) The downside of virtual machine technologies is that having resources indirectly addressed means there is some level of overhead<br>d) All of the mentioned | 6 | CO1 |
| Q 2 | I) An operating system running on a Type _____ VM is a full virtualization.<br>a) 1   b) 2   c) 3   d) All of the mentioned<br><br>II) _____are the three major layers in a Xen Server.<br><br>III) _____ provides a file system level abstraction of the storage, i.e. the remote storage file system can be locally mounted by a host as any other file system.<br>a. NAS   b. SAN   c. Both NAS and SAN   d. All of the above | 6 | CO2 |

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| Q 3 | I) _____ builds a virtual layer on the user-desk top which allows the applications to run and execute without any major dependency on the specifics of the OS and the platform.<br><br>II) Virtualization of a _____ may mean multiple things depending on the kind of business problem solved, but essentially it refers to the creation of a logical network layer over the physical network resources.<br>a. storage   b. server   c. network   d. Application<br><br>III) _____ is a service that creates and manages virtual network interfaces.<br>a) VMware vStorage     b) VMware vNetwork   c) VMware vCompute<br>d) Application services | **6** | **CO2** |
| Q 4 | I) Cloud deployment models are IaaS, PaaS and SaaS.<br>a. True     b. False<br><br>II) _____defines what kind of services the cloud is capable of provid in gand at what cost to the end-user.<br>a. Service list   b. Service cloud   c. Service catalog     d. None<br><br>III) Which of the following is a cloud deployment model? (i)Private Cloud (ii) Public Cloud (iii) Hybrid (iv) IaaS<br>a. (i), (ii) & (iii) are true<br>b. Only (iii) is true<br>c. All are true<br>d. None of these | **6** | **CO3** |
| Q 5 | I) Amazon Web Services is which type of cloud computing distribution model?<br>a. Software as a Service<br>b. Platform as a Service<br>c. Infrastructure as a Service<br>d. None of these<br><br>II) What is the name of the Rack space cloud service?<br>a. Cloud On-Demand<br>b. Cloud Servers<br>c. EC2<br>d. None of these<br><br>III) All qualified servers for virtualization will be classified under two major categories–<br>a. VMs and Computer Systems<br>b. VMs and VDIs<br>c. VMs and Hypervisors<br>d. Hypervisors and Compuer Systems | **6** | **CO4** |

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| **SECTION B** | | | |
| Q 6 | Compare traditional IT Infrastructure and Virtualized Infrastructure. | **10** | **CO1** |
| Q 7 | Explain emulation, simulation and virtualization and elaborate with examples. | **10** | **CO2** |
| Q 8 | Explain Storage Virtualization in detail. | **10** | **CO3** |
| Q 9 | Explain the benefits of application virtualization. | **10** | **CO3** |
| Q 10 | Explain the architectural design of NAS & SAN. | **10** | **CO4** |
| **SECTION-C** | | | |
| Q 11 | a) Elaborate working of VPN in detail. b) Explain "Mixed Work Loads"<br>Or<br>Explain the benefits of application virtualization and network virtualization | **20** | **CO4** |
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