



V SEMESTER B.TECH. (INFORMATION TECHNOLOGY/COMPUTER AND COMMUNICATION ENGINEERING) END SEMESTER EXAMINATIONS, NOVEMBER 2018

**SUBJECT: PROGRAM ELECTIVE-I CLOUD COMPUTING [ICT 4017]
REVISED CREDIT SYSTEM
(30/11/2018)**

Time: 3 Hours

MAX. MARKS: 50

Instructions to Candidates:

- ❖ Answer **ALL** the questions.
- ❖ Missing data if any, may be suitably assumed.

- 1A. Explain in detail any five network key traffic management techniques. 5
- 1B. Describe in detail SOAP and REST based webservices. Which type of webservice is best and why? 3
- 1C. What is Sandboxing? Give its benefits. 2
- 2A. A multinational company wants to use a suitable type of compute virtualization. It needs isolation and high security. Which type of compute virtualization can be suggested for this situation? Explain the suggested type in detail. Compare it with other types of compute virtualizations. 5
- 2B. What is Hadoop? What are its components and features? Explain what is meant by Hadoop as a service in public cloud. 3
- 2C. The data is transferred in a cloud between two hosts at 12AM with an average rate of 13 Kbps bandwidth. After one minute bandwidth is increased more than an average rate to 20 Kbps. Further at 12:12AM for four minutes bandwidth at peak say 30Kbps. What is the burst size at 12:14AM? How long the burst can stay if the data rate is 5.0Kbps? 2
- 3A. Name the various components involved in P2V conversion. Explain the steps with neat diagram, different types of P2V conversions. (P2V: Physical To Virtual Conversion) 5
- 3B. An organization is experiencing tremendous data growth, which increased their storage requirements. Buying more high-end storage is not a cost-efficient solution for them. They require a solution at an optimal cost that enable storing the right data, at the right cost, with the right access. Identify and explain a solution to address this challenge. 3
- 3C. An administrator has configured the following share values for different types of traffic at the distributed virtual switch: Virtual machine traffic: 4000, IP storage traffic: 3000, Virtual machine migration traffic: 1000 and Management traffic: 2000. The available network bandwidth is 15Gbps and the listed traffic types contend for the bandwidth. How much bandwidth will be allocated to the virtual machine migration traffic? 2

- 4A. A Data Center of the XX company wants to go for virtualization. For that it does not want to recruit new employees, neither give training to the present employees. Which type of hypervisor can be suggested for this situation? Explain the suggested type and compare it with other available types. 5
- 4B. Explain Cloud adoption phases. 3
- 4C. Write a webservice to add two given numbers in C# Language. 2
- 5A. Give any four advantages of Virtual Local Area Network (VLAN). Draw a neat diagram for the scenario given below to demonstrate VLAN trunking. 5
 Consider a scenario where an organization has three physical servers with hypervisor. Virtual machine VM1, VM2, and VM3 reside in a physical server PS1, virtual machine VM4 and VM5 are hosted on physical server PS2 and virtual machine VM6 and VM7 are placed on physical server PS3. Each physical server has a virtual switch. These virtual switches are connected to a common physical switch to enable network traffic flow between them. VMs are connected to the respective virtual switches. The organization has to set up four functional groups, each group with unique VLAN ID.
 Marketing group includes VM1, VM4 and VM5
 Production group includes VM2, VM3 and VM6
 Service group includes VM2 and VM5, VM7
 Finance group includes VM3, VM7.
- 5B. Explain any three key security threats and its mitigation techniques for cloud infrastructure 3
- 5C. What is multifactor authentication? 2