

**DEPARTMENT OF CSE, NIT-ROURKELA**  
**Autumn Semester Examination 2020**

**SUBJECT: Cloud Computing-II**

**CODE: CS 3003**

**FULL MARKS : 25**

**Duration of Examination: 1 Hours**

**All question should be answered by own hand writing and uploaded to MS team**

**Answer Any FIVE Questions from the following**

**[Start time 4.30PM, Finish time 5.30PM, Upload on or before 5.40PM]**

- [11] What is a Cloud infrastructure? How does cloud infrastructure work? Differentiate between cloud infrastructure and cloud architecture.
- [12] What is Elasticity is Cloud Infrastructures? What is the difference between scalability and elasticity? Explain the traditional scale-out approach; a cloud architect can take to scale their applications to meet the demand.
- [13] Companies are increasingly aware of the business value that cloud computing brings and are taking steps towards transition to the cloud. What are the major challenges faced by cloud computing?
- [14] What is vendor lock-in in cloud computing? Why is vendor lock-in a concern? Suggest the tips to avoid the risks of vendor lock-in?
- [15] What are the rights and responsibilities for Cloud Computing Services Discuss the separation of responsibility between the cloud user and the cloud service provider?
- [16] A university debating whether to install a private cloud or to use a public cloud, e.g., the AWS or Azure, for its computational and storage needs, asks your advice. What information will you require to base your recommendation on, and how will you use each one of the following items: (a) the description of the algorithms and the type of the applications the organization will run; (b) the system software used by these applications; (c) the resources needed by each application; (d) the size of the user population; (e) the relative experience of the user population; (d) the costs involved.  
  
What will be your advice and why? Should software licensing be an important element of the decision?

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- [17] Describe the three types of traditional hypervisors. Describe four virtualization-like execution environments, and explain how they differ from “true” virtualization. What hardware assistance for virtualization can be provided by modern CPUs?
- [18] Discuss the 7-Layer virtualization model in the context of cloud computing? What is software virtualization? What are the benefits of software virtualization?
- [19] What Are Containers? Discuss the Docker platform in details? What is role of Docker Engine? Differentiate between Hypervisor based Virtualization vs Containerization?
- [20] Security virtualization is the shift of security functions from dedicated hardware appliances to software that can be easily moved between commodity hardware or run in the cloud. What is Virtual machine security? Discuss the role of Virtual Machine Monitor in this context? List the various security benefits of VM

-----**Please upload your answer on or before 5.40PM**-----

**Instruction:**

- You have to submit your scan copy of hand written answer sheet to MS team to appropriate assignment
- Rename your submission file as Rollno\_**A2**; the student with roll no 117CS0246 has to rename the answer file for Question 1 as **117CS0246\_A2**.
- Call me on 9937324437 or 9337938766 for any assistance during the examination. My E-mail id is [bdsahu@nitrkl.ac.in](mailto:bdsahu@nitrkl.ac.in), [bibhudatta.sahoo@gmail.com](mailto:bibhudatta.sahoo@gmail.com).

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