18SCS23

Second Semester M.Tech. Degree Examination, Aug./Sept.2020
Cloud Computing

Time: 3 hrs.

Max. Marks: 100

Note: *Answer any FIVE full questions, choosing ONE full question from each module.*

Module-1

1 a. With a neat block diagram, explain cloud computing reference model and services provided by the cloud. **(10 Marks)**
   b. What are the major challenges faced in cloud? **(05 Marks)**
   c. Write a short note on cloud storage diversity and vendor lock - in. **(05 Marks)**

OR

2 a. Write a note and objectives of service and Compliance – level agreements. **(06 Marks)**
   b. Discuss in details about the Issues faced with respect to energy use in large – scale data centers. **(08 Marks)**
   c. What are the limits of responsibility to be agreed between a cloud user and the Cloud Service provider? **(06 Marks)**

Module-2

3 a. What are the different cloud applications are classified? Explain in detail. **(06 Marks)**
   b. What is a Workflow? With neat diagram, explain the life cycle of a workflow. **(08 Marks)**
   c. With the architecture, explain the map – reduce programming model. **(06 Marks)**

OR

4 a. Explain the case study of the Grep , the web applications. **(10 Marks)**
   b. Write a short note on following :
       i)   Cloud computing for biological research.
       ii) Cloud for high performance computing. **(10 Marks)**

Module-3

5 a. What is the need of layering and virtualization in cloud? Explain in detail with architecture. **(10 Marks)**
   b. Explain in detail, how the hardware is supported for virtualization. **(05 Marks)**
   c. With a neat diagram, explain how network virtualization is optimized in Xen 2.0. **(05 Marks)**

OR

6 a. Elucidate the problems faced by virtualization in X86 Architecture. **(10 Marks)**
   b. Explain the case study of XEN hypervisor, with suitable diagram. **(10 Marks)**

Module-4

7 a. List and explain the different policies adopted for Cloud resource management. **(06 Marks)**
   b. Explain in detail about how the control theory is applied in scheduling the task in a cloud. **(06 Marks)**
   c. With a neat sketch, explain how the co-ordination is made among Autonomic Performance Manager. **(08 Marks)**

OR

8 a. Use the Start – time Fair Queuing (SFQ) Scheduling algorithm to compute the virtual start-up and the virtual finish time for 2 threads a and b with weights $W_a = 1$ and $W_b = 5$ when the time quantum is $q = 15$ and thread b blocks at time $t = 24$ and water up at time $t = 60$. Plot the virtual time of the scheduler function of the real time. **(12 Marks)**

   b. Explain in detail about how the deadlines are achieved while scheduling Applications in Map - reduce. **(08 Marks)**

Module-5

9 a. Explain the security risk faced by Cloud user. **(08 Marks)**

   b. Describe the major concerns of cloud with respect to the security. **(06 Marks)**

   c. With a neat diagram, explain the Virtual Security Services provided by VMM. **(06 Marks)**

OR

10 a. Briefly explain how the security rules are applied for application and transport layer protocols in EC2. **(08 Marks)**

   b. List the step – by – step process to launch an EC2 Linux instance from a Linux platform. **(06 Marks)**

   c. Explain how to use Simple Storage Service (S3) bucket in Java. **(06 Marks)**

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