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20SCS243

Second Semester M.Tech. Degree Examination, July/August 2022
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 diagram, explain the structure of the three delivery models, SaaS, PaaS and IaaS. Analyze the differences between PaaS and IaaS.   **(12 Marks)**
    b.   Explain with diagram, NIST cloud reference model.   **(08 Marks)**

OR

2   a.   Explain with diagram, various components of AWS.   **(10 Marks)**
    b.   List and explain any two open source platforms for private cloud.   **(10 Marks)**

Module-2

3   a.   Bring out the similarities and some differences between workflows of traditional transaction-oriented systems and cloud work flows.   **(10 Marks)**
    b.   Distinguish and narrate two basic models for the mechanics of work flow enactment.
                                                                                          (10 Marks)

OR

4   a.   Explain Zookeeper services and how the application programming interface (API) to the Zookeeper services make uses of seven operations.   **(10 Marks)**
    b.   Write a note on:
         i)   Social computing
         ii)   Digital content
         iii) Java message service.   **(10 Marks)**

Module-3

5   a.   Identify and narrate four means of virtualization simulation that interface to physical object.
                                                                                          (08 Marks)
    b.   A common approach to managing system complexing is to identify a set of layers with well-defined interfaces among them. Explain in detail layering of virtualization with a diagram.   **(12 Marks)**

OR

6   a.   Explain with a neat diagram Xen network architecture considering the original architecture and the optimized architecture.   **(10 Marks)**
    b.   Can virtualization empower the creators of malware to carry out their mischievas activities with impunity and with minimal danger of being detected? How difficult is to implement such a system?   **(10 Marks)**

Module-4

7 a. Write short note on:
   i)   Thresholds
   ii) Proportional thresholding in context of.   (10 Marks)

   b. Explain in detail regarding "Pricing and Allocation Algorithms.   (10 Marks)

OR

8 a. Discuss the Max-Min fairness criterion considering resource with band width 'B' shared among 'n' users who have equal rights. Each user requests an amount 'b_i' and receives "B_i" considering the above how many conditions must be satisfied by a fair allocation in Max-Min criterion.   (08 Marks)

   b. Explain most common scheduling policies used to determine the order of execution.
                                                                               (08 Marks)

   c. Draw a Star-time Fair Queuing (SFQ) tree for scheduling when two Vimal machines VM_1 and VM_2 run on a powerful server.   (04 Marks)

Module-5

9 a. What are the security risks faced by cloud users? Explain three broad classes of risk.
                                                                               (12 Marks)

   b. Considering three actors involved in the model the user, the service and cloud infrastructure. Explain six attacks with neat diagram.   (08 Marks)

OR

10 a. A virtual machine running under Amazon's EC2 has several IP addresses. Explain the different IP addresses.   (10 Marks)

   b. A distributed algorithm for trust management in cognitive radio computes the trust of node $1 \le i \le n$ in each node is its vicinity, $j \in v_i$ and requires several preliminary steps. Explain the basic steps executed by a node 'i' at time 't'.   (10 Marks)

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