

JK Lakshmipat University Jaipur
INSTITUTE OF ENGINEERING AND TECHNOLOGY

Theory Exam-III, May 2022
B. Tech. (CSE), Semester-VI, 2021-22

Roll No.....

CS1217: Cloud Computing Architecture

Time: 2 hours

Max. Marks: 20

Instructions to students:

1. Do not write anything other than your roll number on question paper.
2. Mention all the assumptions for your answers clearly.

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| Q.1 | You have been asked to design a storage system for a web application that allows users to upload large data files to be analyzed by a business intelligence workflow. The files should be stored in a high-availability storage system. File system functionality is not required. Which storage system in Google Cloud Platform should be used? Justify your choice. | 2.0
(CO1) |
| Q.2 | You are planning to deploy a SaaS application for customers in North America, Europe, and Asia. To maintain scalability, you will need to distribute workload across servers in multiple regions. Which GCP service would you use to implement the workload distribution? Why? | 2.0
(LO1) |
| Q.3 | You are designing cloud applications for a healthcare provider. The records management application will manage medical information for patients. Access to this data is limited to a small number of employees. The billing department application will have insurance and payment information. Another group of employees will have access billing information. In addition, the billing system will have two components: a private insurance billing system and a government payer billing system. Government regulations require that software used to bill the government must be isolated from other software systems. Which of the resource hierarchies would meet these requirements and provide the most flexibility to adapt to changing requirements? | 2.0
(CO2) |
| Q.4 | You are deploying a Python web application to GCP. The application uses only custom code and basic Python libraries. You expect to have sporadic use of the application for the foreseeable future and want to minimize both the cost of running the application and the DevOps overhead of managing the application. Which computing service is the best option for running the application? Justify your choice. | 2.0
(CO2) |
| Q.5 | Your manager asks for your help with understanding cloud computing costs. Your team runs dozens of VMs for three different applications. Two of the applications are for use by the marketing department and one is use by the finance department. Your manager wants a way to bill each department for the | 2.0
(CO2) |

cost of the VMs used for their applications. What would you suggest to help to solve this problem?

- Q.6 You have developed an application that calls a service running in a Kubernetes cluster. The service runs in pods that can be terminated if they are unhealthy and replaced with other pods that might have a different IP address. How should you code your application to ensure it functions properly in this situation? 2.0 (CO3)
- Q.7 You have designed a microservice that you want to deploy to production. Before it can be deployed, you have to review how you will manage the service lifecycle. The architect is particularly concerned about how you will deploy updates to the service with minimal disruption. What aspect of App Engine components would you use to minimize disruptions during updates to the service? 2.0 (CO3)
- Q.8 The CEO of your startup just read a news report about a company that was attacked by something called cache poisoning. The CEO wants to implement additional security measures to reduce the risk of DNS spoofing and cache poisoning. What would you recommend? Why? 2.0 (CO4)
- Q.9 You are working in the form displayed after clicking the Add link in the IAM form of IAM & Admin in Cloud Console. There is a parameter called New Members. What items would you enter in that parameter? Justify your action. 2.0 (CO4)
- Q.10 You have just created a virtual machine, and you'd like Stackdriver Monitoring to alert you via email whenever the CPU average utilization exceeds 75 percent for 5 minutes. What do you need to do to the VM to have this happen? 2.0 (CO5)