

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Seventh Semester B.Tech Degree Regular and Supplementary Examination December 2023 (2019 Scheme)

Course Code: CDT401**Course Name: CONCEPTS IN CLOUD COMPUTING****Max. Marks: 100****Duration: 3 Hours****PART A***Answer all questions, each carries 3 marks.*

Marks

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| 1 | Illustrate a scenario where the usage of hybrid cloud can be advantageous for an organization? | (3) |
| 2 | Suppose you are a small business owner with computing needs including document editing, presentation and spreadsheet software, storage requirements, etc. Identify the cloud computing service models that you may utilize and mention how they can be utilized. | (3) |
| 3 | Mention the different types of Virtual Machines. | (3) |
| 4 | Discuss the significance of Domain 0 VM in Xen virtualization environment | (3) |
| 5 | An app development company decided to supplement their server structure with available cloud offerings. Name some of the public cloud service providers they can utilize. | (3) |
| 6 | Online ticket and token booking applications experience huge variation in customer traffic depending upon the time of the day(Eg: Tatkal booking time in the morning). What kind of cloud resource provisioning is suitable for such situations? | (3) |
| 7 | Explain the purpose of Heartbeat and Blockreport messages. | (3) |
| 8 | Name at least three online calendar applications. | (3) |
| 9 | Provide an outline of the Trusted Computing Base(TCB)concept. | (3) |
| 10 | Write a note on Security-as-a-Service. | (3) |

PART B*Answer any one full question from each module, each carries 14 marks.***Module I**

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| 11 | a) Elaborate on the difficulties faced by companies and users in setting up a traditional computing environment and how cloud computing can help with them. | (8) |
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- b) Discuss the key features of Platform-as-a-Service solution in cloud computing. (6)
Also provide an example of a PaaS service.

OR

- 12 a) Summarise the different cloud deployment models along with the advantages and disadvantages of each. (8)
- b) Discuss how the following parallel programming models help in a distributed computing environment: (6)
- i. Message Passing Interface(MPI)
 - ii. MapReduce

Module II

- 13 a) Suppose you have a Desktop/Laptop with Windows 10 OS. If you want to simulate the environment of an Ubuntu OS, how can you achieve it? Write down the steps which you will follow in detail. (6)
- b) Compare OS-Level and Hardware level virtualizations. Mention the advantages and disadvantages of both. (8)

OR

- 14 a) Compare and contrast Para Virtualization and Full Virtualization (7)
- b) Discuss the methods by which the behaviour of I/O devices can be mimicked. (7)

Module III

- 15 a) With the help of a diagram, explain the architecture of Eucalyptus. Write the functions of each of the components. (8)
- b) Explain any three architectural design challenges of building a Cloud environment. (6)

OR

- 16 a) Explore the services offered by Amazon Web Services. Discuss at least three services. (6)
- b) Discuss about the Layered cloud architectural design with the help of a diagram. (8)

Module IV

- 17 a) Suppose you have text document with some content stored in it. Build and explain a programming model that can find the number of occurrences of each unique word in the document in the most efficient way. (8)

- b) Explain the logical data flow of MapReduce framework with a suitable example. (6)

OR

- 18 a) Explain the architecture of Google File System(GFS) with the help of a diagram. (8)
- b) Predict the Pig Latin operations that can be applied to a student record in the following situations: (6)
- a) Find the students with marks above a particular cutoff.
 - b) Apply a specific grace mark to all the students in the list.
 - c) Remove any duplicate records

Module V

- 19 a) Discuss the importance of data and application security in cloud computing. (7)
- b) Write a note on Secure Software Development Life Cycle(SecSDLC) (7)

OR

- 20 a) Introduce the concept cloud forensics and the different steps involved in it. (7)
- b) Analyse the need of a Security Architecture framework in a SaaS environment. (7)
