17136

BRAINWARE UNIVERSITY

Library
Brainware University
398, Ramkrishnapur Road, Barasat
Kolkata, West Bengal-700125

Term End Examination 2025-2026
Programme – BCA-Hons-2023
Course Name – Cloud Computing
Course Code - BCA50115
(Semester V)

Full Marks : 60 **Time : 2:30 Hours**

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question) 1 x 15=15

1. *Choose the correct alternative from the following :*

(i) Which of the following function of the Data Link Layer in the OSI model?

a) Manages file compression
b) Handles IP addressing
c) Provides node-to-node data transfer
d) Controls email routing

(ii) Which of the following is a key characteristic of a distributed system?

a) Centralized control
b) Single point of failure
c) Resource sharing
d) Tight coupling between components

(iii) Choose the term that describes the ability of a system to adapt to increased service load.

a) Capacity
b) Tolerance
c) Scalability
d) None of these

(iv) Which of the following model attempts to categorize a cloud network based on four dimensional factors?

a) Cloud Cube
b) Cloud Square
c) Cloud Service
d) All of the mentioned

(v) The Amazon Machine Images are basically virtual appliances that are packaged for running on the _____ nodes grid.

a) Ken
b) Ben
c) Zen
d) Xen

(vi) Virtualization contributes to Green Computing by:_____

a) Reducing the system's efficiency
b) Reducing the number of physical hardware used
c) Increasing physical hardware uses
d) Decreasing the requirement for individual software purchases

(vii) Choose the remote administration tools used to restart failed services in a cloud environment.

a) Remote desktop or SSH
b) Local OS

c) USB boot
d) Mail alerts

(viii) Operate a resource monitoring system to detect overload. What will help?

a) RAM usage graph
b) Excel sheet
c) Router logs
d) Clock time

(ix) What is the meaning of cloud bursting?

a) Buying new servers
b) Bursting data to the public
c) Expanding workload temporarily to external cloud
d) Running out of memory

(x) What is the role of SOAP in service-oriented architecture?

a) Frontend UI
b) Defines web service protocols for communication
c) Manages email clients
d) Executes scripts offline

(xi) What is the SLA in a cloud context?

a) Server Log App
b) Security Log Audit
c) Agreement on service quality and availability
d) System Language Adapter

(xii) Which of the following type of virtualization is found in hypervisors such as Microsoft's Hyper-V?

a) Paravirtualization
b) Full virtualization
c) Emulation
d) None of the mentioned

(xiii) What is HDFS Block in Hadoop?

a) It is the logical representation of data
b) It is the physical representation of data
c) Both of the above
d) None of the above

(xiv) Choose the two key components of the HDFS (Hadoop Distributed File System) architecture.

a) NameNode and DataNode
b) Server and Router
c) Block and Bit
d) Heap and Stack

(xv) Apply a hash function in a NoSQL DB for_____.

a) Indexing
b) Validation
c) Replication
d) Sorting

Library
Brainware University
398, Ramkrishnapur Road, Barasat
Kolkata, West Bengal-700125

Group-B

(Short Answer Type Questions) 3 x 5=15

2. Differentiate between Elastic Computing and Utility Computing in the context of cloud service management with suitable examples. (3)
3. Illustrate the working mechanism of cloud monitoring . (3)
4. What is IP addressing. (3)
5. Explain how a distributed system enhances resource sharing across multiple machines. (3)
6. Evaluate the effectiveness of existing authentication mechanisms (e.g., multi-factor authentication, biometric access) in securing cloud services against unauthorized access. (3)

OR

Compare data privacy issues in mobile and media clouds. (3)

Group-C

(Long Answer Type Questions) 5 x 6=30

7. Describe how organizations can use hybrid cloud to balance workload and improve efficiency. (5)
8. Apply the concept of hybrid cloud deployment to design a cloud solution for a university managing public access and secure internal systems. (5)
9. Show how big data spreadsheets support data analysis in cloud environments. (5)
10. Categorize various types of threat agents in cloud computing environments. (5)

11. Analyze how encryption techniques address cloud data privacy issues. (5)
12. Defend the use of host-based intrusion detection systems (HIDS) in virtualized cloud environments. (5)

OR

Assess the risks and mitigation strategies for insider threats in cloud infrastructure. (5)

****

Library
Brainware University
398, Ramkrishnapur Road, Barasat
Kolkata, West Bengal-700125