

Reg. No.																			
----------	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Question Paper Code	13096
---------------------	-------

B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV / DEC 2024

Seventh Semester

Computer Science and Engineering

(Common to Artificial Intelligence and Data Science)

20CSPC603 - CLOUD COMPUTING

Regulations - 2020

Duration: 3 Hours

Max. Marks: 100

PART - A (MCQ) (20 × 1 = 20 Marks)

Answer ALL Questions

	<i>Marks</i>	<i>K- Level</i>	<i>CO</i>
1. A parallel computing system consists of multiple processor that communicate with each other using a ____.	1	K1	CO1
(a) Allocated memory			
(b) Shared memory			
(c) Network memory			
(d) None of the mentioned			
2. Cloud computing architecture is combination of ____.	1	K1	CO1
(a) SOA and event driven architecture			
(b) SOA and AWS architecture			
(c) SOA and SOAP architecture			
(d) Reliability			
3. IaaS (Infrastructure as a Service) in cloud computing delivers (i) storage; (ii) servers.	1	K1	CO1
(a) Only (i)			
(b) Only (ii)			
(c) Both (i) and (ii)			
(d) Neither (i) nor (ii)			
4. What is the primary purpose of the virtual machine monitor in full virtualization?	1	K1	CO2
(a) Intercepting and emulating privileged instructions			
(b) Guest OS compatibility			
(c) Direct communication with the hardware			
(d) Improved memory management			
5. How does the publish – subscribe model ensure fault tolerance in distributed systems?	1	K1	CO2
(a) By restricting the number of subscribers per topic			
(b) By replicating messages across multiple brokers			
(c) By encrypting messages to prevent unauthorized access			
(d) By establishing direct communications between publishers and subscribers			
6. In a cloud environment, how does live migration contribute to the efficiency of virtualized resources?	1	K1	CO2
(a) By moving virtual machines between physical servers without service interruption			
(b) By optimizing disk storage space			
(c) By managing user authentication			
(d) By securing communication lines			
7. How does cloud storage benefit small businesses in terms of scalability?	1	K1	CO3
(a) Limited scalability options			
(b) Reduced flexibility			
(c) Easily adjustable storage capacity			
(d) Fixed storage plans			
8. Virtualization software is an example of	1	K1	CO3
(a) Application software			
(b) Middleware			
(c) System Software			
(d) Benchmarking			
9. _____ model originally did not require a cloud to use virtualization to pool resources.	1	K1	CO3
(a) NIST			
(b) NEFT			
(c) NIT			
(d) Both “NEFT” and “NIT”			
10. What is the primary purpose of a hypervisor in virtualized environments in terms of security?	1	K1	CO4
(a) Data encryption			
(b) Resource allocation			
(c) Isolation and Containment			
(d) Network Monitoring			

11. Message integrity and confidentiality can be achieved using _____. 1 K1 CO4
 (a) SSL (b) TLS (c) TPS (d) OAuth
12. _____ method adds or removes computing instances based on the current utilization level of the allocated resources. 1 K1 CO4
 (a) Demand driven (b) Event driven
 (c) Popularity driven (d) Both “demand driven” and “event driven”
13. How does the Map reduce model handle the failure of a mapper node? 1 K1 CO5
 (a) The computation restarts from the beginning
 (b) The master node performs the mapper task
 (c) Another mapper takes over the failed task
 (d) The reducer nodes compensate for the failure
14. Google App Engine provides integration to different development tools like _____. 1 K1 CO5
 (a) Eclipse (b) Jenkins (c) IntelliJ (d) All the mentioned
15. What is the primary purpose of Openstack in cloud computing? 1 K1 CO5
 (a) Providing browser-based applications
 (b) Managing and controlling compute, storage and networking resources
 (c) Offering mobile application development
 (d) Running virtual machines on personal computers
16. One can gracefully stop a MapReduce job by using the command _____. 1 K1 CO5
 (a) Hadoop job -kill JOBID (b) Hadoop job -kill JOBNO
 (c) Hadoop job -kill JOBNAME (d) Hadoop job -kill JOBDESC
17. How does federation contribute to improved resource utilization in the cloud? 1 K1 CO6
 (a) Increased latency (b) Load balancing across federated resources
 (c) Resource duplication (d) Limited scalability
18. Who is going to analyze the SLA? 1 K1 CO6
 (a) Cloud controller (b) Cloud Exchange (c) Cloud mediator (d) Cloud broker
19. _____ is created by connecting the cloud environment of different cloud providers using a common standard. 1 K1 CO6
 (a) Federated cloud (b) Integrated cloud (c) Couch base (d) None of the mentioned
20. In _____ mode if the server accepts a connection from a peer if and only if the peer supports Transport Layer Security? 1 K1 CO6
 (a) Permissive (b) Encrypted (c) Verified (d) Trusted

PART - B (10 × 2 = 20 Marks)

Answer ALL Questions

21. How is On Demand provisioning of resources applied in cloud computing? 2 K1 CO1
22. State Deployment models of cloud computing. 2 K1 CO1
23. Differentiate full virtualization and para-virtualization. 2 K2 CO2
24. Write short note on RESTful systems. 2 K2 CO2
25. What are the design principles considers by Amazon to meet S3 requirements? 2 K1 CO3
26. Mention the major actors involved in NIST reference model. 2 K1 CO3
27. Describe about SAML protocol. 2 K2 CO4
28. Why cloud environment need SSL/TLS? 2 K1 CO4
29. Discuss the role of OpenStack in creating and managing private cloud environments. 2 K2 CO5
30. Describe how identity federation helps in managing user access across clouds. 2 K2 CO6

PART - C (6 × 10 = 60 Marks)

Answer ALL Questions

31. a) Explain in detail underlying principles of Parallel and Distributed Computing. 10 K2 CO1
OR
b) Explain in detail about Elasticity in Cloud and On-demand Provisioning. 10 K2 CO1
32. a) i) Explain about RESTful Systems. 6 K2 CO2
ii) Explain about Web service technologies stack. 4 K2 CO2
OR
b) Describe in detail about the REST a software architecture style for distributed systems. 10 K2 CO2
33. a) Explain in detail about Iaas, Paas and Saas cloud services and the architectural design challenges. 10 K2 CO3
OR
b) Briefly explain about the Cloud Storage Providers and Amazon Simple Storage Service S3 with neat diagram. 10 K2 CO3
34. a) Define cloud Security. Elaborate Cloud Security standards in detail. 10 K2 CO4
OR
b) Discuss in detail Inter Cloud Resource Management. 10 K2 CO4
35. a) Illustrate the architecture of Google App Engine and explain its significance in Platform as a Service (PaaS). 10 K3 CO5
OR
b) Compare and contrast OpenStack and Google App Engine in terms of their use cases, architectures, and service offerings. 10 K3 CO5
36. a) Explain the four levels of federation in cloud computing and provide examples of each. 10 K2 CO6
OR
b) Explain how federated cloud environments address the challenge of vendor lock-in. What strategies do they use to increase portability? 10 K2 CO6