

KATHMANDU UNIVERSITY
End Semester Examination

June/July 2024

16 JUL 2024

Marks Scored:

Level : B.Tech.

Year : III

Course : AICL 318

Semester : I

Exam Roll No. :

Time: 30 mins.

F. M. : 10

Registration No.:

Date

16 JUL 2024

SECTION "A"

[20Q. × 0.5 = 10 marks]

Choose and encircle in the most appropriate option from each set of choices.

1. Which business scenario is best suited to maximize the benefits gained from using a private cloud?
 - a. An enterprise that is not too concerned about control over their data, and the load on their systems is almost constant at all times.
 - b. An enterprise that manages sensitive data requiring maximum control and does not have enough infrastructure capacity to handle variable load.
 - c. An enterprise that manages sensitive data and the load on their systems is fairly consistent.
 - d. An enterprise that is focused primarily on short term projects, and the load on their systems is highly unpredictable.

2. _____ service is used for private docker registry in Azure.
 - a. Docker Container
 - b. Docker Registry
 - c. Container Repository
 - d. Container Registry

3. Which DB is preferable for modern app development in Azure?
 - a. Cosmos DB
 - b. Mongo DB
 - c. PostgreSQL
 - d. Mysql

4. Cloud Data Centers and zones are charged costly according to _____.
 - a. Demand and traffic
 - b. Location and zones
 - c. Connectivity bandwidth
 - d. All of the options

5. In Azure, secured communication between large pools of IoT devices is enabled by _____.
 - a. IoT hub
 - b. IoT Central
 - c. IoT Edge
 - d. MQTT protocol

6. A network where ideal resources of an organization are used to solve common tasks is more of _____ system.
 - a. Cluster
 - b. Grid
 - c. Cloud
 - d. Distributed

7. Certification can be one of the solutions of _____ in maintaining security in the cloud.
 - a. Lack of Control
 - b. Lack of Trust
 - c. Multitenancy
 - d. lack of privacy

8. Communication with cloud resources can be done through _____.
 - a. tenant interface
 - b. Cloud API
 - c. Both the options
 - d. None of the options

9. Using Multiple cloud providers could be a solution for challenges related to _____ in the cloud.
 - a. Availability
 - b. data lock in
 - c. data bottlenecking
 - d. infrastructure scaling.
10. VMware is a way of achieving _____.
 - a. Full Virtualization
 - b. Para Virtualization
 - c. Emulation
 - d. None of the options
11. Which of the following in open source cloud platform is
 - a. AWS
 - b. Azure
 - c. Cloudstack
 - d. Google Cloud
12. Which of the following is heavily associated with vendor lock-in?
 - a. PaaS
 - b. IaaS
 - c. SaaS
 - d. XaaS
13. Geographic distribution of data across a cloud provider's network is a problem for many enterprises because it _____.
 - a. Breaks compliance regulations
 - b. Adds latency
 - c. security concerns
 - d. Makes data recovery harder
14. Which of the following is not a cloud infrastructure service component?
 - a. Integration software.
 - b. Physical infrastructure.
 - c. System Software.
 - d. Management software
15. Which of the following is not an advantage of SOA?
 - a. Language neutral integration
 - b. Component reuse
 - c. Security and privacy concerns
 - d. Organizational Agility
16. Module Availability is given by _____.
 - a. $MTTF/(MTTF+MTTR)$
 - b. $MTTF/(MTTF+2)$
 - c. $MTTR/(MTTF+MTTR)$
 - d. $(MTTF+MTTR)/MTTF$
17. Tools for prototyping and testing generative AI in GCP is _____.
 - a. GCP AutoML
 - b. Vertex AI
 - c. OpenAI
 - d. Pre-trained LLMs
18. AI clouds may not help in _____.
 - a. Cost and resource optimization
 - b. Custom AI Solutions
 - c. Data-Driven Decision-Making
 - d. Better security and privacy concerns
19. AWS service that integrates cloud and AI technologies for image and video analysis is _____.
 - a. Sagemaker
 - b. VertexAI
 - c. Rekognition
 - d. VisionAI
20. Which refers to the practice of a primary cloud provider offering services that are distributed through another cloud provider?
 - a. Hybrid cloud
 - b. Grid computing
 - c. Community cloud
 - d. Composite cloud

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F. M. : 40

SECTION "B"

[6 Q. × 4 = 24 marks]

Attempt *ANY SIX* questions.

1. Write in brief about advantages of AI Cloud and how AI can be used in the cloud.
2. Discuss in brief about dockerization, its components and architecture.
3. Write in brief about probable challenges and opportunities of cloud computing.
4. Explain about different service models of cloud computing with a scenario where these models may be applicable.
5. Explain in brief about availability of a system with perspective of MTTF, MTBF and MTTR. Why does this concept may not be applicable for systems with non exponentially distributed lifetimes? [2+2]
6. Point out the major issues in cloud security with its probable solutions in terms of lack of control.
7. What are the basic components of IoT? How can cloud compliment the emerging technologies of IoT and Big Data? [2+2]

SECTION "C"

[2Q × 8 = 16 marks]

Attempt *ALL* questions.

8. Discuss in brief virtualization and the security concerns with its implementation. Write in brief about different types of virtualizations and hypervisors. [4+4]
9.
 - a. Write in brief about deployment models of cloud and the scenarios where these models may be deployed. [4]
 - b. Discuss in brief about overlapping of different types of distributed systems. [4]

10. 10. 10.

