



The University of Fiji
(An Entity of Arya Pratinidhi Sabha of Fiji)



SCHOOL OF SCIENCE AND TECHNOLOGY
Semester 2, 2025

FINAL EXAMINATION PAPER

ITC334: CLOUD COMPUTING

Important Instructions to Students:

1. Read the questions, instructions carefully and answer the questions.
2. You are allowed an **extra 10 minutes reading time** (during this time, you are not allowed to write with a pen) and **180 minutes (3 Hours) to complete this paper**.
3. Silent, non-programmable calculators are allowed, but not supplied.
4. Write all your answers in the answer booklet provided. If you need extra sheets, please ask from the supervisor. Write your name, course code and student identification number in the answer booklet and in the attendance sheet.
5. This paper contains Three (3) sections A, B and C. All questions are compulsory to answer.
6. Write all your answers legibly. The marker has the right to award zero for answers that are not legible.
7. This is a **Closed Book Examination**. The University views plagiarism, cheating and dishonest practice as serious offences and if found, offenders are penalized.

Examination Paper Content (Format):

<u>Section</u>	<u>Question</u>	<u>Content</u>	<u>Marks</u>	<u>Suggested Time</u>
A	1- 25	Multiple Choice	25	45 minutes
B	1-25	Short Answer Questions	50	90 minutes
C	1 - 5	Long Answer Questions	25	45 minutes
		TOTAL	100	180 Minutes

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Write the question number and the letter which represents the most appropriate answer for each question in the answer booklet. Each question is worth 1 mark.

1. Which of the following is NOT one of the five essential characteristics of cloud computing defined by NIST?
 - A. On-demand self-service
 - B. Broad network access
 - C. Adaptive security
 - D. Resource pooling
2. An organization moves email services to Microsoft 365 but retains on-prem databases. This is an example of:
 - A. Private cloud
 - B. Community cloud
 - C. Hybrid cloud
 - D. SaaS only
3. Cloud bursting is best used when:
 - A. Workload permanently exceeds on-prem limits
 - B. Temporary spikes in demand exceed on-prem capacity
 - C. Migration planning is incomplete
 - D. A company wants to avoid vendor lock-in
4. Intel VT-x and AMD-V are examples of:
 - A. Container runtimes
 - B. Hypervisor APIs
 - C. Hardware-assisted virtualization
 - D. Virtual NICs
5. Which VM networking mode is most secure for malware testing labs?
 - A. Bridged mode
 - B. Host-only mode
 - C. NAT mode
 - D. Hybrid mode
6. Which keyword is used to declare a constant in Java?
 - A. static
 - B. final
 - C. const
 - D. constant

7. Which migration strategy involves replacing an existing app with a SaaS solution?
 - A. Rehost
 - B. Revise/Replatform
 - C. Repurchase/Replace
 - D. Retire
8. Which of the following is a baseline metric typically collected before cloud migration?
 - A. SLA terms
 - B. Compliance requirements
 - C. Current system performance
 - D. Data encryption keys
9. Which type of testing is used to verify that an application performs under real-world load after migration?
 - A. Unit testing
 - B. Regression testing
 - C. Stress testing
 - D. Functional testing
10. Software-Defined Networking (SDN) allows cloud customers to:
 - A. Replace physical switches directly
 - B. Configure networking at the software level
 - C. Eliminate redundancy requirements
 - D. Install their own NIC drivers on CSP hardware
11. A ping test primarily checks:
 - A. Bandwidth throughput
 - B. Packet routing tables
 - C. Basic network connectivity
 - D. DNS caching
12. Which type of scan requires software agents installed on the monitored device?
 - A. Credentialed scan
 - B. Agent-based scan
 - C. Network-based scan
 - D. Vulnerability scan
13. Which IAM issue occurs when a user retains old roles even after transferring jobs?
 - A. Orphan account
 - B. Privilege creep
 - C. Misconfigured root account
 - D. Insider threat

14. Which storage type is directly connected to the host computer?
- A. SAN
 - B. NAS
 - C. DAS
 - D. SDS
15. RAID 5 requires at least how many drives?
- A. 2
 - B. 3
 - C. 4
 - D. 5
16. ConMon stands for:
- A. Continuous Monitoring
 - B. Contextual Monitoring
 - C. Configured Monitoring
 - D. Concurrent Monitoring
17. Which visualization principle suggests grouping related metrics together?
- A. First things first
 - B. Birds of a feather
 - C. Five-second rule
 - D. Less is more
18. Which log type stores login attempts?
- A. Application log
 - B. System log
 - C. Access/authentication log
 - D. Event log
19. A CSP's monitoring dashboard should display critical information within:
- A. 1 second
 - B. 5 seconds
 - C. 10 seconds
 - D. 30 seconds
20. Certificate-based authentication relies on:
- A. Biometric scanners
 - B. Symmetric encryption only
 - C. Public key infrastructure (PKI)
 - D. Password vaults

21. Which migration strategy is most suitable for legacy apps requiring minimal disruption?
- A. Rehost
 - B. Retire
 - C. Refactor
 - D. Repurchase
22. In cloud networking, who is responsible for managing the underlying physical hardware?
- A. SaaS customer
 - B. IaaS user
 - C. CSP
 - D. PaaS developer
23. Which is a direct benefit of cloud load balancing?
- A. Vendor neutrality
 - B. Even distribution of traffic across servers
 - C. Automatic patching of backend servers
 - D. Avoidance of subnetting
24. An enterprise wants to ensure that only specific IP addresses can access their database service. Which approach should they use?
- A. Allow list
 - B. Deny list
 - C. Shadow IT monitoring
 - D. Container isolation
25. A junior admin is given root account access in AWS for convenience. What risk does this create?
- A. Shadow IT
 - B. Orphan accounts
 - C. Over-privileged access
 - D. Credential sprawl

SECTION B. SHORT ANSWER QUESTIONS 50 MARKS

Answer ALL the questions from this section in the answer booklet provided.

1. Give two key differences between public and private cloud deployments. (2 Marks)
2. List and explain two reasons organizations choose to migrate to cloud computing. (2 Marks)
3. What is the role of a hypervisor in virtualization? (2 Marks)
4. Differentiate between Type 1 and Type 2 hypervisors (2 Marks)
5. Why is business continuity planning important in cloud migration? (2 Marks)
6. What is the role of a Change Advisory Board (CAB) during migration? (2 Marks)
7. List two common cloud threats and their mitigation techniques. (2 Marks)
8. Differentiate between agent-based scans and network-based scans. (2 Marks)

9. Define privilege creep with an example. (2 Marks)
10. Define Single Sign-On (SSO) (2 Marks)
11. Define data deduplication and its benefit. (2 Marks)
12. State two benefits of using dashboards in cloud performance management. (2 Marks)
13. Define measured service in cloud computing and give an example. (2 Marks)
14. Define Software-Defined Networking (SDN) in the cloud. (2 Marks)
15. Explain the shared responsibility model in cloud security. (2 Marks)
16. List two benefits of using multifactor authentication (MFA). (2 Marks)
17. Give one advantage and one disadvantage of using a public cloud over a private cloud. (2 Marks)
18. Explain Shadow IT using an example. (2 Marks)
19. State three data transfer methods used in cloud migration. (2 Marks)
20. Name the three types of device drivers that can be used in VM configurations. (2 Marks)
21. Explain how availability zones in Azure or AWS contribute to high availability. (2 Marks)
22. What is ballooning in memory management? (2 Marks)
23. List at least four essential characteristics of cloud computing. (2 Marks)
24. What is the role of pilot testing during migration? (2 Marks)
25. Explain the term rollback plan in migration projects. (2 Marks)

SECTION C. LONG ANSWER QUESTIONS 25 MARKS

Answer ALL the questions from this section in the answer booklet provided.

1. An e-commerce site frequently faces downtime when one server fails. Discuss how load balancing and auto-scaling improve both availability and performance. (5 Marks)
2. A financial services firm requires customers to use password + OTP for login. Explain how MFA enhances security, and compare it with SSO. (5 Marks)
3. An employee leaves the organization but their IAM account remains active. Discuss the risks of this situation and suggest IAM policies to prevent it. (5 Marks)
4. A cybersecurity lab wants to safely test malware in virtual environments. Recommend the most suitable VM networking mode and explain why it enhances security. (5 Marks)
5. A regional airline faces frequent cyclones that disrupt its on-premises servers. Explain how cloud disaster recovery strategies (replication, backup, and failover) could keep operations running. (5 Marks)

THE END