Roll No……

GL BAJAJ Institute of Management & Research Greater Noida
FIND YOUR SPARK

Plot No. 2, Knowledge Park-III, Greater Noida (U.P.) –201306

POST GRADUATE DIPLOMA IN MANAGEMENT (2024-26)
MID TERM EXAMINATION (TERM -IV)

Subject Name: **Cloud Computing for Business** Time: **01.00 hrs**
Sub. Code: **PGIT44** Max Marks: **20**

Note: Read the following case and answer the following questions: 10×2 = 20 Marks

Kindly write the all the course outcomes as per your TLEP in the box given below:

CO-1 Remember: fundamental concepts of cloud computing, including deployment models (public, private, hybrid) and service models (SaaS, PaaS, IaaS). **L2, L5** **CO-2** Understand:the advantages and drawbacks of different cloud services (SaaS, PaaS, IaaS) and how they align with organizational needs. **L2** **CO-3** Understand: Amazon Web Services (AWS) and its benefits, pricing models, and services like EC2 and Elastic Load Balancing to design scalable solutions. **L4** **CO-4** Analyze: Evaluate the business benefits and technical challenges of cloud adoption, and formulate strategies to mitigate risks while implementing monitoring and security measures. **L3, L-5**

Case Study 2: **Strategic Cloud Adoption at GlobalRetail Inc.** **CO1**

GlobalRetail Inc. is a mid-sized multinational retail company headquartered in New York, USA, with operations spanning North America, Europe, and Asia. Established in 2005, the firm specializes in e-commerce and physical stores, offering consumer electronics, apparel, and home goods. In 2024, GlobalRetail achieved revenues of $2.5 billion and employed over 5,000 staff. The company has long depended on on-premise data centers to handle critical functions such as inventory management, customer relationship management (CRM), supply chain logistics, and online transaction processing. However, a 40% surge in online sales, driven by post-pandemic consumer shifts, has overwhelmed this infrastructure. This has resulted in frequent system downtimes, escalating maintenance expenses, and severe limitations in scalability, hindering the company's ability to respond to market demands efficiently.

CEO Maria Lopez has commissioned the management team to assess cloud computing as a pathway to operational modernization. Assuming familiarity with core cloud concepts—including deployment models (public, private, hybrid, multi-cloud), service models (IaaS, PaaS, SaaS), features, challenges, risks, benefits, and disadvantages—the evaluation focuses on applying these to GlobalRetail's context. As management students, you are to analyze the case and formulate recommendations for the board's consideration.

Case Details

In early 2025, GlobalRetail suffered a critical system outage during a peak holiday sales period, leading to $10 million in lost revenue and eroded customer confidence. The IT team projects that sustaining the existing on-premise setup will require $15 million over the next three years, encompassing necessary upgrades and expansions. Initial consultations with cloud providers indicate that a full migration could incur an upfront cost of $8 million but yield annual savings of approximately $5 million through optimized resource utilization.

Key stakeholders hold varied perspectives: The CFO expresses apprehension regarding data privacy vulnerabilities, particularly in light of recent high-profile cyberattacks targeting retail peers. The COO advocates for a hybrid approach, which would maintain internal control over sensitive inventory and financial data while exploiting public cloud capabilities for dynamic e-commerce scaling during events like Black Friday. Meanwhile, the marketing department emphasizes the need for SaaS solutions to bolster customer analytics and personalization efforts.

The board has sanctioned a $10 million budget for the initiative and mandates a complete rollout within 12 months. This timeline includes planning, vendor selection, data migration, testing, and training. Success will hinge on minimizing disruptions, achieving cost efficiencies, and enhancing overall agility in a competitive retail landscape.

Case based Questions

1. Explain how cloud computing model aligns with GlobalRetail's growth and digital transformation goals.
2. Identify desired cloud features GlobalRetail should prioritize. Discuss how overall cloud features address current infrastructure challenges.

Case Study 2: Cloud Strategy Crossroads: MediSync's Future-Proofing Mission CO2

Case Overview

MediSync Technologies, a fast-growing health tech startup based in San Francisco, specializes in real-time patient monitoring systems and predictive analytics for chronic disease management. With 150 employees and $80 million in annual revenue, MediSync serves 100 clinics and hospitals across the U.S. and Canada. In late 2025, the company faces a critical juncture: its on-premises infrastructure struggles to handle surging demand for its wearable device integration platform, leading to 15% downtime during peak usage and a $1.5 million revenue hit last quarter.

CEO Priya Anand has convened the executive team—CIO, CFO, and VP of Engineering—to select a cloud service model (SaaS, PaaS, or IaaS) to support a new machine learning-driven patient alert system and ensure scalability for 50% projected growth in 2026. With a $1.5 million migration budget and a 15-month ROI target, the team must address virtualization, load balancing, and scalability to achieve 99.99% uptime and avoid further client churn.

Company Background and Current Challenges

MediSync's current setup includes:

- **On-Premises Infrastructure**: 30 physical servers running Python-based applications for real-time monitoring and analytics, with $900K in annual maintenance costs.
- **Key Pain Points**:
    - **Scalability Limits**: Wearable data streams spike 400% during health crises (e.g., heatwaves), causing server crashes and delayed alerts.
    - **Virtualization Shortfalls**: Minimal virtualization (using Docker) leads to 45% resource waste, inflating operational costs.
    - **Load Balancing Weakness**: Static load balancers fail to prioritize critical patient alerts, resulting in 10-second delays for 20% of users.
    - **Regulatory Pressures**: Evolving FDA and GDPR compliance requirements demand robust data encryption and audit trails.
    - **Development Delays**: Infrastructure management consumes 55% of engineering time, stalling the ML alert system rollout.

The board insists on a cloud strategy to restore client confidence and outpace competitors like VitalCare, which gained 15% market share after adopting a cloud model. Options under consideration:

- **SaaS**: Use pre-built platforms like Medtronic’s monitoring tools or Twilio for communication APIs. Quick to deploy but may not support MediSync’s custom ML models.
- **PaaS**: Leverage Google Cloud Functions or AWS Lambda for scalable app development with managed infrastructure.
- **IaaS**: Deploy VMs on Azure or Google Compute Engine for full control over configurations and compliance.

Strategic Considerations

The team’s research yields the following data:

Cloud Model	Setup Time	Annual Cost (Post-Migration)	Scalability Features	Control Level
SaaS	1-3 months	$600K (subscriptions)	Auto-scaling; basic load balancing	Low (vendor-locked)
PaaS	3-5 months	$850K (platform + compute)	Auto-scaling; managed load balancers	Medium (app-focused)
IaaS	5-7 months	$750K (VMs + storage)	Custom scaling; flexible load balancing	High (infrastructure)

It’s September 2025, and the team must deliver a recommendation by November 15. Competitor VitalCare’s cloud migration slashed downtime to 0.1%, boosting its stock 12%. MediSync’s recent outages have fueled negative buzz on X, with clients threatening to switch providers. The CIO pushes for PaaS to speed up the ML system launch, while the CFO favors IaaS

for cost control and compliance. Anand demands a solution that leverages virtualization and load balancing to ensure zero delays in patient alerts and supports 25% revenue growth via the new system.

Case based Questions

1. How should MediSync optimize virtualization and load balancing to eliminate alert delays during 400% traffic spikes?
2. Which cloud model best balances MediSync's needs for rapid innovation, cost efficiency?

Kindly fill the total marks allocated to each CO's in the table below:

COs	**Marks Allocated**
CO1	10 Marks
CO2	10 Marks

Blooms Taxonomy Levels given below for your ready reference:

L1= Remembering
L2= Understanding
L3= Apply
L4= Analyze
L5= Evaluate
L6= Create