Assignment: Cloud Computing Case Study – Online Learning Platform

Case Study Description

A startup plans to build an **online learning platform** with the following requirements:
- User traffic fluctuates significantly (high during exams, low otherwise)
- Fast deployment and quicker time-to-market are critical
- Limited initial budget
- Platform includes video streaming, user authentication, quizzes, and analytics

Based on the above scenario, answer the following questions.

Section A: Understanding the Need for Cloud

Q1. Explain why cloud computing is suitable for the given startup
.
Mention key reasons and relate them to the case study.

Section B: Cloud Deployment Model Analysis

Q2. Choosing the Cloud Type

a) Which cloud type would you recommend for this startup?
- Public Cloud
- Private Cloud
- Hybrid Cloud

b) Justify your choice based on:
- Cost
- Scalability
- Security
- Operational overhead

Q3. Business Growth Scenario

After two years, the startup:
- Handles sensitive student data
- Partners with universities
- Requires higher compliance and control

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a) Would you continue with the same cloud type?

b) If not, which cloud type would you suggest and why?

Section C: Cloud Service Model Evaluation

Q4. Choosing the Service Model

a) Which cloud service model is most suitable for developing this platform?
- IaaS
- PaaS
- SaaS

b) Explain why the other service models are less suitable for this use case.

Q5. Shared Responsibility Model

For the selected service model, specify **who is responsible** (Cloud Provider or User) for managing the following:
- Infrastructure
- Operating System
- Application code
- Scaling
- Security patches

Section D: Scalability & Performance

Q6. Handling Fluctuating Traffic

Explain how cloud computing helps the platform handle:
- Sudden spikes in user traffic
- Reduced traffic during off-peak periods

Mention relevant cloud features in your answer.

Section E: Cost Optimization

Q7. Cost Management in Cloud

a) Explain how the **pay-as-you-go** pricing model benefits this startup

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