

**Continuous Assessment Test II – March 2025**

Programme	: MCA	Semester	: WINTER 2024-2025
Course Title	: Cloud Computing	Code	: PMCA506L
Faculty (s)	: Dr.M.Priyaadharshini	Class Nbr(s)	: CH2024250501736
Time	: 90 minutes	Slot	: E2+TE2
		Max. Marks	: 50 marks

General Instructions:

- Write only your registration number on the question paper in the box provided and do not write other information.

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| 1. | A startup, LearnAI, is building an AI-powered e-learning platform that provides personalized learning experiences to students. The platform offers video content delivery, compute resources for AI-based recommendation engines, user authentication & access control, monitoring & alerts, AI chatbot support.
Propose and illustrate the suitable AWS services for the above product requirements (10) | 10 |
| 2. | A FinTech startup, FastPay, provides an online real-time payment processing platform. The company is growing rapidly, but their software delivery pipeline faces major bottlenecks, including frequent deployment failures leading to downtime, slow-release cycles due to manual testing and approvals, environment inconsistencies between development, testing, production, and security vulnerabilities in their cloud-based infrastructure. The project demands quality project completion and delivery on-time. <ol style="list-style-type: none"> Identify the suitable solution to resolve the challenges (3) Illustrate with an architecture and justify your answer (7) | 10 |
| 3. | A SaaS company, EduCloud, provides an AI-powered learning management system (LMS) for universities and enterprises. The platform delivers video lectures, real-time assessments, and AI-driven learning recommendations. The challenges are environment inconsistency, manual deployment issues, resource utilization inefficiencies scaling bottlenecks, and deployment errors. The company targets for quick, error free deployment. <ol style="list-style-type: none"> How you will provide solution for EduCloud? (3) Illustrate your proposed solution and compare it with the traditional approach (7) | 10 |
| 4. | A healthcare company, MediTrack, is developing a smart remote patient monitoring system that collects real-time health data (heart rate, oxygen levels, and ECG) from wearable devices. The system must process critical alerts instantly while also storing vast amounts of patient data for long-term analysis and AI-driven diagnostics. The challenges faced by MediTrack are latency issues, bandwidth constraints, data security & privacy, scalability & long-term analytics. <ol style="list-style-type: none"> Illustrate how edge computing solves these issues? (6) How your solution differs from cloud services? (4) | 10 |

5. A social media platform wants to analyze hashtags used in millions of tweets every day to identify trending topics across different regions. Each tweet contains text along with metadata such as timestamp, user location, and hashtags. Sample post is mentioned below.
"Excited to be at #TechConference2025!. So, many amazing speakers talking about #AI, #MachineLearning, and #BigData. Can't wait to learn more about #CloudComputing and #DataScience. Also, met some incredible folks working on #Alethics and #CyberSecurity. #Networking #TechForGood".
- Illustrate the functionality of mapper and reducer function (5)
 - Apply the MapReduce function for step-by-step process for this social media post (5)