



विश्वजीवनमृतं ज्ञानम्

Atal Bihari Vajpayee Indian Institute of Information Technology & Management, Gwalior

IT401: Cloud Computing

Major Examination (Session 2024–25)

Maximum Time: 3 Hours

Max Marks: 60

Note: Attempt all questions. Justify assumptions wherever needed.

1. (a) Discuss the role of virtualization in cloud computing. (b) Illustrate with a block diagram how a hypervisor manages multiple VMs. (8 Marks)
2. A company wants to move its on-premises ERP system to the cloud. (a) Which service model (IaaS, PaaS, SaaS) would be most suitable? Why? (b) Identify two challenges they might face during migration. (10 Marks)
3. (a) What is load balancing in cloud computing? Explain algorithms such as Round Robin and Least Connections. (b) Illustrate load balancing for a scenario with 3 servers and 9 incoming requests. (10 Marks)
4. (a) Explain cloud data security challenges (multi-tenancy, insider threats, VM escape). (b) Propose techniques to mitigate these issues. (10 Marks)
5. (a) Differentiate between batch processing (e.g., MapReduce) and stream processing (e.g., Apache Storm). (b) Explain an application scenario where stream processing is preferable. (10 Marks)
6. Short Notes (any two): (i) Edge vs Fog computing (ii) Cloud-native applications (iii) Disaster recovery in cloud (12 Marks)