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**MCS-227**

**MASTER OF COMPUTER  
APPLICATIONS (MCA-NEW)**

**Term-End Examination**

**June, 2024**

**MSC-227 : CLOUD COMPUTING AND IOT**

*Time : 3 Hours*

*Maximum Marks : 100*

*Weightage : 70%*

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**Note :** (i) *Question No. 1 is compulsory.*

(ii) *Answer any **three** questions from the rest.*

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1. (a) Define Type-1 and Type-2 hypervisors in virtualization, highlighting their differences and use cases. How do they contribute to effective resource utilization in cloud environment ? 10
- (b) What are the main characteristics and advantages of public, private and hybrid

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cloud deployment models ? How does an organization decide which development model is most suitable for its specific business requirements ? 10

(c) What are the primary advantages that an organization can derive from adopting cloud computing ? Additionally, Could you offer real-world examples illustrating how business leverage cloud services to enhance efficiency, scalability and flexibility ? 10

(d) What do you mean by Edge-Computing ? How does it differ from cloud and Fog computing ? In what scenarios does edge computing excel ? 10

2. (a) What are the key challenges in Fog-Computing ? Explain the commonly used strategies and technologies developed to overcome security, scalability, and resource management, by ensuring the reliability of Fog computing environments. 10

- (b) What are the primary security challenges associated with IoT devices and networks ? What strategies and technologies are essential for addressing these challenges and ensuring a secure IoT environment ?  
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3. (a) What are the application and key challenges of IoT in smart transportation ? How does IoT contribute to improving efficiency; safety and sustainability in modern transport systems ?  
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- (b) What is scaling in cloud computing ? Describe Proactive and Reactive scaling strategies.  
10
4. (a) Explain the architecture of Resource pooling. How are server, storage and network pools structured in cloud environments ? Discuss the significance of each pool in achieving efficient resource utilization.  
10

- (b) What do you mean by Resource Sharing ?  
Explain tenancy at different level of cloud services. 10

5. Write short notes on the following : 4×5=20

- (a) Scaling Strategies
- (b) Resource Provisioning
- (c) IoT security
- (d) Grid computing *vs.* Cloud computing