

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

Term-End Examination

December, 2022

MCS-227 : CLOUD COMPUTING AND IoT

Time : 3 hours

Maximum Marks : 100

(Weightage : 70%)

Note : Question no. 1 is **compulsory** and carries 40 marks. Answer any **three** questions from the rest.

1. (a) What is resource provisioning in cloud computing ? Explain the static and dynamic approaches of resource provisioning. Mention their advantages and disadvantages. 10
- (b) Define Load Balancing. Explain the following algorithms with reference to load balancing : 10
- (i) Static algorithm approach
- (ii) Weighted Round Robin

- (c) Discuss the following baseline technologies of IoT : 10
- (i) Security in IoT
 - (ii) IoT Analytics
 - (iii) IoT Processors
 - (iv) IoT Standards and Ecosystems
- (d) Define Edge Computing. Draw a block diagram of Cloud-Fog-Edge collaboration and explain all its layers. 10
- 2.** (a) What is scalability in Cloud Computing ? Explain the following strategies of scaling : 10
- (i) Proactive Scaling
 - (ii) Reactive Scaling
- (b) Define VM (Virtual Machine) sizing. Discuss the two ways to do VM sizing. 5
- (c) Mention any five applications of Cloud Computing. 5
- 3.** (a) Define a sensor with reference to an IoT device. Explain various characteristics of sensors. Also, mention and explain any four classifications of sensors. 10
- (b) Explain the following computing components used in laboratories of IoT/Cloud : 10
- (i) Arduino
 - (ii) Raspberry Pi

4. (a) Discuss the following Service Delivery Models of Cloud, with an example for each : 10
- (i) Platform as a Service (PaaS)
 - (ii) Infrastructure as a Service (IaaS)
- (b) “Cloud Computing offers a variety of deployment models, a network connection viewpoint will be used to examine Cloud deployment models and their accessible components.” With reference to this statement, discuss the following types of network connectivities : 10
- (i) Public Inter Cloud Networking
 - (ii) Private Intra Cloud Networking
5. Write short notes on the following : 4×5=20
- (a) Applications of Fog Computing
 - (b) Desktop Level Virtualization
 - (c) Actuator and its any three types
 - (d) Zigbee, NFC and RFID connectivity technologies used in IoT applications
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