MCS-227

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