Introduction to Internet of Things

Assignment-Week 9

TYPE OF QUESTION: MCQ/MSQ

Number of questions: 15 **Total marks: 15 X 1= 15**

QUESTION 1:

Which of the following is/are the advantages of cloud computing?

a. Elasticity

b. Pay-per-use

c. Self Service

d. All of the above

Correct Answer: d. All of the above

Detailed Solution: The advantages of cloud computing include Elasticity, Pay-per-use and Self-Service. (Please refer Lecture 42@6:45)

QUESTION 2:

Fill in the blanks. Fog computing is an intermediate layer between _____ and _____.

a. Dew and devices

b. Cloud and devices

c. Cloud and server

d. None of these

Correct Answer: b. Cloud and devices

Detailed Solution: Fog computing is an intermediate layer between Cloud and devices. (Please refer Lecture 44@6:40)

QUESTION 3:

The managerial role is played by _____ in sensor-cloud architecture.

a. End-users

b. Sensor-Cloud Service Provider

c. Neither a nor b

d. Both a and b

Correct Answer: b. Sensor-Cloud Service Provider

Detailed Solution: Sensor-Cloud Service Provider plays the managerial role in sensor-cloud architecture. (Please refer Lecture 42@14:29)

QUESTION 4:

Which of the following is not a component of OpenStack?

a. Suse

b. Nova

c. Swift

d. All of these

Correct Answer: a. Suse

Detailed Solution: Nova and Swift are two of the many components of OpenStack

(Please refer Lecture 41@3:18)

QUESTION 5:

Who coined the term Fog computing?

a. IBM

b. CISCO

c. All of these

d. None of these

Correct Answer: b. CISCO

Detailed Solution: CISCO coined the term Fog computing. (Please refer Lecture 44@4:18)

QUESTION 6:

Fill in the blank. The concept of _____ enables physical hardware to be shared among multiple entities.

a. Hardware virtualization

b. Software virtualization

c. Module virtualization

d. All of these

Correct Answer: a. Hardware virtualization

Detailed Solution: The concept of hardware virtualization enables physical hardware to be shared among multiple entities. (Please refer to Page 262, Chapter 11, Introduction to IoT. S. Misra, A. Mukherjee, and A. Roy, 2020. Cambridge University Press.)

QUESTION 7:

Openstack is a free open source software for cloud framework simulation and experimentation with various cloud applications.

a. True

b. False

Correct Answer: a. True

Detailed Solution: Openstack is a free open source software for cloud framework simulation and experimentation with various cloud applications. It can be downloaded and installed for free. Refer Lecture 41.

QUESTION 8:

In IoT, temporal sensitivity of data DOES NOT play an important role

a. True

b. False

Correct Answer: b. False

Detailed Solution: IoT data can be classified in to time sensitive data, less time sensitive data and data not sensitive to time. Hence time sensitivity plays a big role in IOT data classification. Refer lecture 44 on Fog Computing

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QUESTION 9:

Which among the following is NOT a component of OpenStack.

a. Horizon

b. Heat

c. Stellar

d. Neutron

Correct Answer: c. Stellar

Detailed Solution: Stellar is not a component of OpenStack. The rest are various components, including Nova, Glance, Swift etc. Refer lecture 41, ppt No. 4

QUESTION 10:

Which among the following is the principal feature of sensor clouds, with respect to sensor nodes?

a. Sensor monitoring

b. Sensor instantiation

c. Sensor virtualization

d. Sensor collection

Correct Answer: c. Sensor virtualization

Detailed Solution: Sesnor virtualization is the principal feature of sensor clouds and their utility. Refer lecture 42 and 43 on Sensor cloud

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QUESTION 11:

The optimal composition of _____ is a management issue in sensor-cloud.

a. Logistics

b. Pricing

c. Caching

d. Virtual sensor nodes

Correct Answer: d. Virtual sensor nodes

Detailed Solution: The optimal composition of Virtual sensor nodes is a management issue in sensor-cloud. (Please refer Lecture 43@4:39)

QUESTION 12:

How many different types of caching mechanism are there in sensor cloud?

a. 1

b. 4

c. 2

d. 3

Correct Answer: c. 2

Detailed Answer: Internal Cache (IC) and External Cache (EC) are two different types of caching

mechanisms used in sensor cloud. Refer lecture 43, ppt No. 13

QUESTION 13:

Data from an IoT device is transferred to cloud via a network, which is then processed at the cloud and then a response is sent back to the IoT device from the cloud after processing. The time it takes for one-way data transfer between the node and cloud is 10s and the data processing time at the cloud is 'x' seconds. It takes a total of 25s for the entire to and fro transfer of data between the sensor and cloud along with processing at the cloud. What is the value of x?

a. 10s

b. 5s

c. 15s

d. 20s

Correct Answer: b. 5s

Detailed Solution: Time taken for one-way data transfer between the node and cloud is 10s. Total time taken for the data transfer is 25s. So 25=10+x+10 (transfer from node to cloud+processing at cloud+transfer from cloud to node). Thus x=5s.

QUESTION 14:

Which among the following is true?

a. Fog computing acts as a complement to cloud computing.

b. Fog computing is a replacement for cloud computing.

c. Fog computing and cloud computing are the same.

d. Fog computing is more powerful than cloud computing (with respect to resources).

Correct Answer: a. Fog computing acts as a complement to cloud computing.

Detailed Solution: Fog computing and cloud computing are complementary technologies.

Fog helps in bringing the cloud closer to the IoT devices. (Please refer Lecture 45@1:06)

QUESTION 15:

Which component of OpenStack do you use to access all the other components?

a. Horizon

b. Glance

c. Neutron

d. None of these

Correct Answer: a. Horizon

Detailed Solution: Horizon is the dashboard of OpenStack which provides the GUI and from where you

can access other components. Please refer Lecture 41@3:54

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