Introduction to

Internet of Things

Assignment-Week 7

TYPE OF QUESTION: MCQ/MSQ

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

QUESTION 1:

A Raspberry Pi can read data from a sensor but cannot send it over to a remote server for further processing.

     a. True

     b. False

Correct Answer: b. False

Detailed Solution: Refer Lecture 31@2:49

QUESTION 2:

In Python socket programming, with respect to the *sock.bind(server_address)* function, which among the following does the variable *server_address* contain?

     a. IP address of destination

     b. Port number of destination server

     c. Neither IP address nor port number of destination server

     d. Both IP address and port number of destination server

Correct Answer: d. Both IP address and port number of destination server

Detailed Solution: Refer Lecture 31@14:00.

QUESTION 3:

In Python matplotlib, in order to display the graphical plot on a terminal, the command *plt.plot()* is used in conjunction with which of the following?

      a. plt.plt()

      b. plt.show()

      c. plt.xtics()

      d. plt.axes()

Correct Answer: b. plt.show()

Detailed Solution Refer Matplotlib tutorials as per Lecture 32.

QUESTION 4:

The following Python code displays a parabolic plot using matplotlib.

import numpy as np

import matplotlib.pyplot as plt

x = np.linspace(-10, 10, 400)

y = x**2

plt.figure(figsize=(8, 6))

plt.xlabel("x", fontname="Times New Roman", fontsize=12)

plt.ylabel("y", fontname="Times New Roman", fontsize=12)

plt.title("Plot of a Parabola: y = x²", fontname="Times New Roman", fontsize=14)

plt.grid(True)

plt.legend(loc="upper left")

plt.axhline(0, color='black', linewidth=0.5) # x-axis

plt.axvline(0, color='black', linewidth=0.5) # y-axis

plt.show()

Observe the code very carefully. Will the code plot the desired parabola?

       a. Yes

b. No

Correct Answer: b. No

Detailed Solution: plt.plot() is not included which is the principal method to plot any graph.

QUESTION 5:

With respect to the above Question (Question 4), which the must be added to make the code display the parabola?

      a. Nothing, the code works fine

      b. plt.xtics() method

      c. plt.plot() method

      d. plt.setfigure() method

Correct Answer: c. plt.plot() method.

Detailed Solution: plt.plot() is not included which is the principal method to plot any graph.

QUESTION 6:

In Python, suppose that that string text = 'It^is my#birthday!I am*Happy'.

What will the output of the following instruction

    data = text.split(' ')

    print(data[1])

      a. It^is my#birthday!I am*Happy

      b. my#birthday!I

      c. am*Happy

d. It^is

Correct Answer: b. my#birthday!I

Detailed Solution: As per Python guidelines.

QUESTION 7:

Consider the same text again

text = 'It^is my#birthday!I am*Happy'

Now consider the following instructions. What will be the output?

data = text.split('r')

print(data[1].split('bi'))

       a. my#birth

       b. *Happy

       c. thday!I am*Happy

       d. It^is

Correct Answer: c. thday!I am*Happy

Detailed Solution: As per Python guidelines.

QUESTION 8:

With respect to SDN for IoT what does 'end-devices' in the phrase 'control for end-devices'

mean?

      a. SDN Controllers

      b. SDN Switches

      c. Sensors and Actuators

      d. Database

Correct Answer: c. Sensors and Actuators

Detailed Solution: Refer Lecture 35@6:22.

QUESTION 9:

A Network Operating System (NOS) resides in which of the following logical plane?
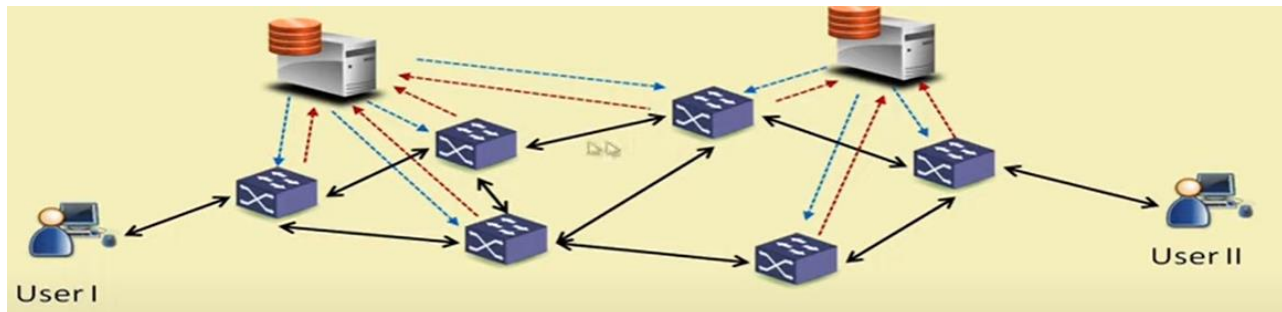
      a. Application Plane

      b. Control Plane

      c. Data Plane

      d. Both Data Plane as well as Application Plane

Correct Answer: b. Control Plane

Detailed Solution: Refer Lecture 33@13:19.

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QUESTION 10:

Consider the figure of the network as given below.

Which of the following network topologies does this figure relate to?

        a. Ring topology

        b. Bus topology

        c. Mesh topology

        d. Tree topology

Correct Answer: c. Mesh topology

Detailed Solution: Refer Lecture 34@7:27.

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QUESTION 11:

With respect to the same figure (given below), what does the blue directional dotted arrows from the controller to the switches represent?

        a. Northbound API

        b. Southbound API

        c. Eastbound API

        d. Westbound API

Correct Answer: b. Southbound API.

Detailed Solution: the APIs connecting the controller with the data plane switches are known as Southbound APIs.

QUESTION 12:

Consider the following figure below. To which issue of SDN does this particular figure can be related to?

Match SDN Applications First and Use Normal For Unmatched Packets (Hybrid Default Forwarding)										
Priority	Ingress Port	MAC Source Address	MAC Destination	Protocol	Vlan ID	IP Source Address	IP Destination	Source Port	Destination Port	Instructions
10000	*	*	*	TCP	*	*	10.1.1.20/32	*	80	Forward to Port 1
5000	*	*	*	*	*	*	10.1.1.0/24	*	*	Forward to Port 2
300	*	*	*	*	2600	*	*	*	*	Send to Controller
0	*	*	*	*	*	*	*	*	*	OF Normal

  a. Controller placement issue

  b. Flow Rule placement issue

  c. Hardware placement issue

  d. Analysis placement issue

Correct Answer: b. Flow Rule placement issue

Detailed Solution: The given figures shows the tabular structure of how flow rules are installed within SDN switches, so it pertains to flow rule placement issues. Refer Lecture 33@18:54, Rule Placement.

QUESTION 13:

Which among the following is the most suitable utility of Mininet?

  a. To act as a virtual sensor

b. To provide a simulation environment for SDN with OpenFlow

c. To act as a generic antenna simulator

d. To perform load testing and analysis.

Correct Answer: b. To provide a simulation environment for SDN with OpenFlow

Detailed Solution: Refer Lecture 34@12:23.

QUESTION 14:

Control of end devices such as sensors and actuators do not form a use-case for Software Defined IoT.

      a. True

      b. False

Correct Answer: b. False

Detailed Solution: Refer Lecture 35@6:06.

QUESTION 15:

With respect to packet delivery ratio, which of the following is true?

      a. WSN outperforms Soft-WSN

      b. Soft-WSN outperforms WSN

      c. Neither of Soft-WSN and WSN outperform each other

      d. No relation between Soft-WSN and WSN

Correct Answer: b. Soft-WSN outperforms WSN

Detailed Solution: Refer Lecture 35@11:37.

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