NPTEL Online Certification Courses

Indian Institute of Technology Kharagpur

Introduction to Internet of Things

Assignment-Week 6

TYPE OF QUESTION:MCQ/MSQ

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

QUESTION 1:

State True or False.

Statement: “Python is popular for embedded application development as it is a very lightweight programming language.”

a. True

b. False

Correct Answer: a. True

Detailed Solution: Python is popular for embedded application development as it is a very lightweight programming language.

(Please refer to lecture INTRODUCTION TO PYTHON PROGRAMMING- I @ 1:22)

QUESTION 2:

State True or False.

Adafruit provides a library to work with DHT22 Sensor.

a. True

b. False

Correct Answer: a. True

Detailed Solution: Adafruit provides a library to work with DHT22 Sensor. (Please refer to lecture Implementation of IoT with Raspberry Pi- II @ 4:41)

QUESTION 3:

Consider the following piece of Python code. What is the output?

```
x = [4, 5, 6]
y = [str(x[0] + 1), str(len(x) * 2) + '&Code']
z = y[1].split('&')
print(z[1])
```

a) 5

b) 12

c) Code

d) &Code

Correct Answer: c. Code

Detailed Solution:

1. x = [4, 5, 6]: A list with three elements.

2. y = [str(x[0] + 1), str(len(x) * 2) + '&Code']:

o x[0] is 4, so x[0] + 1 is 5, and str(x[0] + 1) becomes "5".

o len(x) is 3, so len(x) * 2 is 6, and str(len(x) * 2) + '&Code' becomes "6&Code".

o Therefore, y = ["5", "6&Code"].

3. z = y[1].split('&'):

o y[1] is "6&Code".

o Splitting "6&Code" by '&' gives ['6', 'Code'].

4. z[1] is 'Code'.

Thus, the print(z[1]) statement outputs Code.

QUESTION 4:

State True or False.

Statement: "To indicate different blocks of code, Python follows rigid indentation."

a. True

b. False

Correct Answer: a. True

Detailed Solution: To indicate different blocks of code, Python follows rigid indentation.

(Please refer to lecture INTRODUCTION TO PYTHON PROGRAMMING- I @ 7::29).

QUESTION 5:

What is the output of the following line of code in Python?

>>> print "Hi, Welcome to python!"

a. Hi, Welcome to python!

b. "Hi, Welcome to python!"

c. Hi, Welcome to python

d. None of these

Correct Answer: a. Hi, Welcome to python!

Detailed Solution: The output of the following line of code in Python -

>>> print "Hi, Welcome to python!"

Output: Hi, Welcome to python!

(Please refer to lecture INTRODUCTION TO PYTHON PROGRAMMING- II @ 07:31)

QUESTION 6:

During remote server access by a Raspberry Pi, where the Raspberry Pi acts as a client, the client needs the following?

a. Only IP address of server

b. Only port number

c. Both server IP address and port number

d. Client's IP address

Correct Answer: c. Both server IP address and port number

Detailed Solution: A client can communicate with a server only if both IP address and port numbers are known. (Please refer Lecture 31@14:13)

QUESTION 7:

State whether the following command to install the PIL library is correct or not.

sudo pip install pillow

a. Correct
b. Incorrect

Correct Answer: a. Correct

Detailed Solution: The command to install the PIL library is *sudo pip install pillow*.

(Please refer to lecture INTRODUCTION TO PYTHON PROGRAMMING- II @ 17:40)

QUESTION 8:

What is the purpose of the `"w"` mode in the `open()` function in Python?

A) To read a file
B) To write data to a file, overwriting existing content
C) To append data to a file
D) To open a file in read and write mode

Correct Answer: B) To write data to a file, overwriting existing content

Detailed Solution: "w" mode is used to write data to a file, overwriting existing content

(Please refer to lecture INTRODUCTION TO PYTHON PROGRAMMING- II @05:05).

QUESTION 9:

What will be the output of the given Python program when reading from the file?

```
with open("PythonProgram.txt", "w") as file:
    file.write("Writing data")
with open("PythonProgram.txt", "r") as file:
    f = file.read() print('Reading from the file\n') print(f)
```

A) Writing data
B) Reading from the file
Writing data
C) Error: File not found
D) None of the above

Correct Answer: B. Reading from the file

Writing data

Detailed Solution: Reading from the file

Writing data

(Please refer to lecture INTRODUCTION TO PYTHON PROGRAMMING-II @05:05).

QUESTION 10:

Can we configure Raspberry Pi as a File Server?

a. Yes
b. No

Correct Answer: a. Yes

Detailed Solution: We can configure Raspberry Pi as a File Server.

See lecture INTRODUCTION TO RASPBERRY PI-I @ 02:46

QUESTION 11:

Which command is used to configure the Raspberry Pi for the camera module?

A) `sudo camera-config`
B) `sudo raspi-config`
C) `sudo enable-camera`
D) `sudo pi-setup`

Correct Answer: B) `sudo raspi-config`

Detailed Solution: `sudo raspi-config` is used to configure the Raspberry Pi for the camera module

See lecture INTRODUCTION TO RASPBERRY PI-II @ 18:44

QUESTION 12:

What is the final step after enabling the camera in the Raspberry Pi configuration?

A) Restart the camera service
B) Run a camera test command
C) Reboot the Raspberry Pi
D) Reinstall the Raspberry Pi OS

Correct Answer: C) Reboot the Raspberry Pi

Detailed Solution: after enabling the camera in the Raspberry Pi configuration, reboot.

See lecture IMPLEMENTATION OF IOT WITH RASPBERRY PI-II @ 18:44

QUESTION 13:

Which command Exits the nano editor?

a. Ctrl + X
b. Ctrl + O
c. Ctrl + K
d. None of these

Correct Answer: a. Ctrl + X

Detailed Solution: Ctrl + O exits the nano editor.

See lecture IMPLEMENTATION OF IOT WITH RASPBERRY PI-II @ 10:20

QUESTION 14:

In a temperature-controlled fan system using a relay, when should the fan turn on?

A) When the relay is manually triggered
B) When the surrounding temperature is lower than a predefined threshold
C) When the surrounding temperature exceeds a predefined threshold
D) When the battery voltage drops below a certain level

Correct Answer: C) When the surrounding temperature exceeds a predefined threshold

Detailed Solution: In a temperature-controlled fan system using a relay, the fand should turn on when the surrounding temperature exceeds a predefined threshold.

(Please refer to lecture INTRODUCTION TO PYTHON PROGRAMMING- II @ 11:18)

QUESTION 15:

What does the following line of code do?

raspistillcapture -o image.jpg

a. Captures video feed
b. Captures still image
c. Both (a) and (b)
d. None of these

Correct Answer: d. None of these

Detailed Solution: Command is wrong.

(Please refer to lecture INTRODUCTION TO RASPBERYY PI-II @ 19:29)

**********END**********