NPTEL Online Certification Courses

Indian Institute of Technology Kharagpur

Introduction to Internet of Things

Assignment-Week 5

TYPE OF QUESTION: MCQ/MSQ

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

QUESTION 1:

Which of the following is/are current challenges in IoT?

a. Large scale of co-operation

b. Global heterogeneity

c. Both (a) and (b)

d. Neither (a) nor (b)

Correct Answer: c. Both (a) and (b)

Detailed Solution: Large scale of co-operation and Global heterogeneity are current challenges in IoT.

See lecture 21 (Interoperability in Internet of Things) @ 03:41.

QUESTION 2:

State True or False.

Statement: “Interoperability is not a characteristic of a product or system.”

a. True

b. False

Correct Answer: b. False

Detailed Solution: Interoperability is a characteristic of a product or system.

Refer Lecture 21@5:51

QUESTION 3:

Interoperability is required because

a. There are different programming languages
b. There are different communication protocols
c. Both (a) and (b)
d. Neither (a) nor (b)

Correct Answer: c. Both (a) and (b)

Detailed Solution: Interoperability is required because

a) There are different programming languages

b) There are different communication protocols

Refer Lecture 21@08:30

QUESTION 4:

State whether the following statement is true or false

Statement: "Use of different programming languages such as JavaScript, Python, JAVA, and others is an example of heterogeneity in IoT. This brings in the need for interoperability."

a. False
b. True

Correct Answer: b. True

Detailed Solution: Use of different programming languages such as JavaScript, Python, JAVA, and others is an example of heterogeneity in IoT. This brings in the need for interoperability

(Please refer Lecture 21@09:12)

QUESTION 5:

State True or False.

Statement: "The interoperability between devices and device users in terms of message formats is called Systematic Interoperability."

a. True

b. False

Correct Answer: b. False

Detailed Solution: The interoperability between devices and device users in terms of message formats is called Syntactic Interoperability.

Refer Lecture 21@17:06.

QUESTION 6:

What is the full form of UMB in IoT interoperability?

a. Universal Meta Bridge

b. Universal Main Bridge

c. Universal Main Bracket

d. None of these

Correct Answer: d. None of these

Detailed Solution: UMB stands for Universal Middleware Bridge.

Refer Lecture 21@22:16.

QUESTION 7:

State true of false

Arduino is an open-source electronic programmable board.

a. True

b. False

Correct Answer: a. True

Detailed Solution: Arduino is an open-source electronic programmable board.

Refer Lecture 22@05:17

QUESTION 8:

State true or false

Additional electronic circuits are essential to load a program into the Arduino controller board.

a. True

b. False

Correct Answer: b. False

Detailed Solution: No additional electronic circuits are essential to load a program into the Arduino controller board.

Refer Lecture 22@05:17.

QUESTION 9:

Arduino UNO has _____ number of Digital I/O pins.

a. 8

b. 13

c. 14

d. None of these

Correct Answer: c. 14

Detailed Solution: Arduino UNO has 14 number of Digital I/O pins.

Refer Lecture 22@07:08.

QUESTION 10:

What does the following code do?

```
int ledPin = 13;
void setup() {
pinMode(ledPin, OUTPUT);
for (int i = 0; i < 3; i++) {
digitalWrite(ledPin, HIGH);
delay(1000);
digitalWrite(ledPin, LOW);
delay(500);
}
```

```
}
void loop() {
// Do nothing
}
```

a) Blink 3 times with 1000ms ON and 500ms OFF

b) Blink 3 times with 500ms ON and 500ms OFF

c) Blink 3 times with 1000ms ON and 1000ms OFF

d) Stay ON continuously

Correct Answer: a) Blink 3 times with 1000ms ON and 500ms OFF

Detailed Solution:

The LED is turned ON for 1000ms using delay(1000).

The LED is turned OFF for 500ms using delay(500).

This process repeats 3 times in the for loop.

Thus, the LED blinks 3 times with 1000ms ON and 500ms OFF.

QUESTION 11:

How many types of loops will you find in Arduino Programming?

a. 1

b. 2

c. 3

d. 4

Correct Answer: c. 3

Detailed Solution: Like C programming Arduino sketches also have 3 types of loops, for, while and do-while loops.

QUESTION 12:

Choose the right option for if/conditional operator.

a. Val = (condition)?(Statement 1):(Statement 2)

b. Val = (condition)?(Statement 2):(Statement 1)

c. Val = (condition):(Statement 1)?(Statement 2)

d. Val = (condition):(Statement 2)?(Statement 1)

Correct Answer: a. Val = (condition)?(Statement 1):(Statement 2)

Detailed Solution: Conditional operator may also be written as Val = (condition)?(Statement 1):(Statement 2). (Please refer Lecture 23@2:01)

QUESTION 13:

What is the purpose of calling dht.begin(); in the setup() function?

A) To initialize the Serial Monitor

B) To start communication with the DHT sensor

C) To set the temperature and humidity values to zero

D) To define the data pin for the sensor

Correct Answer: B) To start communication with the DHT sensor

Detailed Solution: Calling dht.begin(); in the setup() function starts communication with the DHT sensor.

Refer Lecture 24@ 17:25.

QUESTION 14:

What function is used to read the humidity value from the DHT sensor?

A) dht.getHumidity();

B) dht.readTemp();

C) dht.readHumidity();

D) dht.getTemperature();

Correct Answer: c. dht.readHumidity();

Detailed Solution: dht.readHumidity(); function is used to read the humidity value from the DHT sensor Lecture 24@17:25.

QUESTION 15:

What function is used to set the servo motor to a specific angle?

A) ServoDemo.move()

B) ServoDemo.rotate()

C) ServoDemo.write()

D) ServoDemo.setAngle()

Correct Answer: c. ServoDemo.write()

Detailed Solution: ServoDemo.write() function is used to set the servo motor to a specific angle.

Refer Lecture 25@18:47.

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