BHARTIYA SKILL DEVELOPMENT UNIVERSITY

Registration No.: .....

School of Computing Skills

Session: 2019-20 (Summer)

B. Voc. Program, 5th Semester,

1st In-Sem. Examination

ITN1504 Internet of Things **Time: 1 Hour**

Max. Marks: 20

Instruction: Attempt all questions

Section – A

05X01 = 05 Mark

Q1. Which one of the following is not a part of the Arduino Uno?
A. Software serial
B. Hardware serial
C. Digital I/O Pins
D. Parallel port

Q2. Which one of the following risks and challenges should be considered in the Internet of Things?
A. Privacy and Security
B. Energy Consumption
C. Network Congestion
D. All of the above

Q3. Which one of the following is the meaning of IIoT?
A. Information Internet of Things
B. Industrial Internet of Things
C. Innovative Internet of Things
D. None of the above

Q4. Which one of the following describes the communication between huge number of devices in IOT?
A. Inter device
B. Machine to Machine
C. InterCloud
D. Skynet

Q5. Which one of the following is the size of the IPv6 address?
A. 32 bits
B. 64 bits
C. 128 bits
D. 256 bits

Section – B

03X02 = 06 Marks

Q6. List the main parts of IoT systems.

Q7. Explain the IoT protocol stack.

Q8. Is Internet always needed for any IOT device? Explain briefly.

Section – C

03X03 = 09 Marks

Q9. What is meant by a smart city with respect to the Internet of Things?

Q10. Write down the steps required to include a library in the Arduino IDE from external sources using Zip file. Assume that the library is not available in the IDE.

Q11. What is the syntax to read analog and digital data from a sensor in the Arduino?

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Section - A

A1. D A2. D A3. B A4. B A5. C

Section – B

A6. IoT system consists of three main parts:

1. Sensors
2. Network connectivity
3. Data storage applications.

A7. IoT has 4 protocol layers:

1. **Sensing and information**: Includes various smart sensor devices based on GPS, RFID, Wi-Fi etc.
2. **Network connectivity**: Layer is based on a wired and wireless network such as WLAN, WMAN, Ethernet, optical fibre and more.
3. **Information processing layer**
4. **Application layer**

A8. No. The internet is not always required. But it should be available whenever the device needs to talk to other devices or when it needs to upload the data to the cloud.

Section – C

A9. As with IoT and different popular era terms, there is no established consensus definition or set of standards for characterizing what a smart metropolis is. Precise characterizations vary widely, however in fashionable they involve the use of IoT and related technologies to improve energy, transportation, governance, and other municipal offerings for certain desires which includes sustainability or advanced great of lifestyles.

A10. Following steps are taken to include the library:

1. Search the library on the net.
2. Most often you will find the library at Github.
3. Download the Zip file to your computer.
4. In Arduino IDE go to include library option and go to include Zip file option
5. Upload the zip file to Arduino IDE
6. Now again go to include library option in the IDE and you will see the required library there.
7. Select and include the library.

A11. digitalRead() and digitalWrite() are respectively used to read and write digital data to the sensors. analogRead() and analogWrite() are respectively used to read and write analog data to the sensors.