Marks: 40



School: School of Engineering and Technology

Program: BTech-Information Technology

Year: 4th Semester: 5th
Examination: End Semester Examination

Examination year: December - 2021

Course Code: IT322 Course Name: Introduction to Microcontroller/Microcontroller and its Applications

Date: 10/12/2021

Time: 8:30 AM to 10:30 AM Total Pages: 1

Instructions for students:

1. This question paper consists of five main questions with their related sub-questions

2. Write answers for questions belonging to same question/sub-question together. Do not answer questions haphazardly

3. Make assumptions wherever required

4. Manage time effectively during examination so that paper is completed in specified duration

Q No	Details	BTL	CO	Marks		
Q 1.	Attempt the following questions: [1 mark each]			(5)		
[A]			11			
1.	Arduino board is used in wearable devices.					
	a. Leonardo b. Lillypad USB	1,2,3	CO4			
	c. Tian d. Uno					
× .	In I2C communication nodes can only assume one role i.e. either master or slave. True		CO1			
2.	or false?	1,2	CO4			
	a. True b. False					
	DHT sensor sends data every seconds	4.0	602			
3.	a. 1 b. 2	1,2	CO2			
	c. 4 d. 3					
	In Arduino, information to be stored for long term is put into	1.2	CO3			
4.	a. RAM b. Flash	1,2	CO4			
	c. EEPROM d. SROM					
	In relation to IoT, Arduino can mean		CO3			
5.	a. A board b. An open source programming language	1,2,3				
	c. A software/IDE d. All options are correct					
Q 1.	Define and describe the use of the following terms (Any 5): [1 mark each]					
[B]						
1.	Jumper wires	1,2	CO3			
2.	Schematic	1,2,3	CO4			
3.	Function: setup()	1,2	CO3			
4.	Function: pinMode()	1,2	CO3			
5.	Sensor	1,2	CO3			
6.	SCL	1,2	CO3			
Q 2.	Short answer questions [Any 5]: [2 marks each]					
1.	Explain the concept of functions in Arduino.	1,2	CO3			
2.	What is SoC? Explain.	1,2,3	CO3			
3.	What is Serial monitor? Explain its uses.	1,2	CO3			
4.	Which categories of memory are used in Arduino and what are their uses? Explain.	1,2,3	CO1			
		1,2,3	CO3			
5.	Explain any two types of Arduino boards.	1,2	CO3			
6.	Explain Arduino program structure.	1,2,3	CO3			
Q 3.	Answer in detail [Any 4]: [5 marks each]			(20)		
1.	Explain benefits of Arduino in detail	1,2	CO3			
2.	What is a Shield? Explain any two types of shield and its uses.	1.2	CO2			
۵.		1,2	CO3			
	Explain the concept of pulse width modulation and its use for Arduino projects.	1,2,3	CO1			

			CO3					
4.	Explain any five pre-defined constants that are used in Arduino programming.	1,2	CO3					
5.	Explain I2C protocol and communication transactions in detail.	1,2,3	CO3					
End of Question Paper								