

(Karunya Institute of Technology & Sciences)
(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

Code : 14EC2029
Sub. Name : EMBEDDED SYSTEM DESIGN

Semester : 2016-17 ODD
Duration : 3hrs
Max. marks : 100

Q. No.	Sub Div.	Questions	Course Outcome	Marks
1.	a.	Write an embedded c program to operate a DPDT relay connected with 8085 microprocessor. Draw the hardware block diagram and software flowchart.	CO3	12
	b.	Explain ICE with a neat diagram. And Compare Emulator with ICE	CO2	8
		(OR)		
2.	a.	Write an embedded c program to rotate the stepper motor in forward and reverse direction using a transistor motor driver Circuit, interfaced with 8051 microcontroller. Draw the hardware block diagram and software flowchart.	CO3	12
	b.	Mention the purpose of the following i) Linker iii) Locator ii) Compiler iv) Loader	CO2	8
3.	a.	With a neat diagram elucidate the embedded design life cycle with an example	CO3	15
	b.	Explain the process flow for establishing the serial communication.	CO1	5
		(OR)		
4.	a.	Analyze the hardware requirement for any embedded application along With the product Specification	CO1	15
	b.	Discuss the Issues in Hardware / Software design and Co-design	CO1	5
5.	a.	Design an interfacing circuit for a closed loop DC motor control	CO1	10
	b.	What is the need for IDE in an Embedded Architecture? Discuss with an example.	CO2	10
		(OR)		
6.	a.	Explain the skills required for an embedded system designer for developing small scale, medium scale and sophisticated system.	CO2	10
	b.	Define semaphore and explain binary semaphore and Mutex with relevant diagrams.	CO3	10
7.	a.	Design an embedded system which displays minutes and second. Give the software flowchart.	CO3	16
	b.	Explain SCI along with the control Signals	CO1	4

(OR)

- | | | | | |
|-------------------------------|----|---|-----|----|
| 8. | a. | Design an embedded system for an Automatic Washing machine using RTOS. Explain the different task and give the hardware block diagram. | CO1 | 14 |
| | b. | Sketch the hardware block diagram of Bio Metric Attendance reader system. | CO1 | 6 |
|
<u>Compulsory:</u> | | | | |
| 9. | a. | Design an embedded system for an Automatic Coffee Vending Machine using RTOS. Explain the different task and give the hardware block diagram. | CO1 | 14 |
| | b. | Mention the importance of scheduling in the RTOS system. | CO3 | 6 |

ALL THE BEST