C

Reg. No. :

Question Paper Code: 99453

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2022

Open elective

Civil Engineering

19UEC953– Embedded System and programming

(Common to CSE, EEE, Mechanical, IT, Chemical, Agriculture and Biomedical Engineering)

(Regulation 2019)

Duration: Three hours | Maximum: 100 Marks

Answer ALL Questions

PART A - (5x 1 = 5 Marks)

1. Which of the following is an example of immediate type addressing mode in ES? CO1- U

   (a) MOV A, #6AH (b) MOV A,04H (c) MOV A,R 4 (d) MOV R3,R2.

2. Integrate the concurrent development of both the hardware and the software using the methodology called---------- CO1- U

   (a) Intellectual property (b) Co-Design (c) Prototyping (d) Internet of Things

3. Effective approach for determining the necessary stimuli for both test and troubleshooting is based on ------- CO1- U

   (a) path sensitizing (b) path synthesizing (c) debugging (d) testing

4. The ___ tracks the number of times a semaphore has been acquired or released by maintaining a token count. CO4- U

   (a) single task operating syst (b) hardware (c) Kernel (d) software

5. Which design can be used to reduce the energy consumption of the embedded system? CO5- U

   (a) simulator (b) Compiler (c) emulator (d)debugger

PART – B (5 x 3= 15 Marks)

6. What is a stack? CO1-U

7. Define spiral model? CO2- U

8.	What is a smoke test?		CO1- U	
9.	What is a real-time operating system?		CO4- U	
10.	What is the general syntax for declaring a pointer to afunction?		CO5- U	

PART – C (5 x 16= 80Marks)

11.	(a)	Describe briefly about Register View of a Microprocessor?	CO1- U	(16)
		Or		
	(b)	Describe the necessary steps for Execution flow of an embedded program?	CO2- U	(16)
12.	(a)	Illustrate with diagrams the system design methods using water life cycle model and v- life cycle model?	CO1- App	(16)
		Or		
	(b)	Illustrate with diagrams the system design methods using Spiral life-cycle model and Rapid prototyping life-cycle model?	CO1- App	(16)
13.	(a)	Discuss in detail about the strategy for applying module debug and test	CO1- U	(16)
		Or		
	(b)	Describe briefly about Path Sensitizing	CO1- U	(16)
14.	(a)	Identify and explain the core responsibilities of a real-time operating system. Briefly describe the operating system architecture	CO1- U	(16)
		Or		
	(b)	What is a task control block? What are some of the major components of a task control block?	CO1- U	(16)
15.	(a)	Discuss the advantages and disadvantages of using pass by reference versus pass by value in an embedded C program?	CO1- U	(16)
		Or		
	(b)	What is a symbol table? Identify the information that is stored in the symbol table. What is the purpose of the symbol table?	CO1- U	(16)