Reg.No.:												

VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN
[AUTONOMOUS INSTITUTION AFFILIATED TO ANNA UNIVERSITY, CHENNAI]
Elayampalayam – 637 205, Tiruchengode, Namakkal Dt., Tamil Nadu.

Question Paper Code: 80003

B.E. / B.Tech. DEGREE END-SEMESTER EXAMINATIONS – NOV. / DEC. 2024

Seventh Semester

Electrical and Electronics Engineering

U19EE727 – EMBEDDED SYSTEM

(Regulation 2019)

Time: Three Hours | Maximum: 100 Marks

Answer ALL the questions

Knowledge Levels (KL)	K1 – Remembering	K3 – Applying	K5 - Evaluating
	K2 – Understanding	K4 – Analyzing	K6 - Creating

PART – A

(10 x 2 = 20 Marks)

Q.No.	Questions	Marks	KL	CO
1.	Mention what are the major components in embedded system?	2	K1	CO1
2.	List the different categories of Embedded Systems based on the area of applications.	2	K1	CO1
3.	What is a I2C bus? Where is it used?	2	K2	CO2
4.	Mention few serial bus communication protocols.	2	K2	CO2
5.	How over run of interrupts is prevented?	2	K2	CO3
6.	Justify the use of a thread in a process.	2	K4	CO3
7.	Interpret on how to choose an RTOS.	2	K2	CO4
8.	What do you mean by priority inversion?	2	K1	CO4
9.	Summarize the applications of embedded system.	2	K2	CO5
10.	How embedded system is employed in smart card system application?	2	K2	CO5

PART – B

(5 x 13 = 65 Marks)

Q.No.			Questions	Marks	KL	CO
11.	a)	i.	Differentiate general purpose processor and application specific system processor in detail.	7	K1	CO1
		ii.	Explain about register and memory devices in embedded hardware.	6	K1	
			(OR)			
	b)		With the help of neat block diagram, explain architecture of embedded system.	13	K1	CO1
12.	a)		Discuss in detail about timer and counting devices for Embedded systems with neat diagram.	13	K2	CO2
			(OR)			
	b)		Elaborate the architecture of CAN with necessary sketches.	13	K2	CO2
13.	a)		Discuss about interrupt driven input/output and types of interrupts.	13	K4	CO3
			(OR)			
	b)		Write brief notes on i. Pre-emptive multitasking. ii. Non-pre-emptive multitasking.	13	K4	CO3
14.	a)	i.	Compare various task scheduling algorithms in RTOS.	7	K1	CO4
		ii.	Differentiate Hardware and Software Co-Design with all the salient features of them.	6	K1	
			(OR)			
	b)		Discuss in detail about inter process communication.	13	K1	CO4
15.	a)		With suitable diagram, explain about the concept of embedded system in washing machine application.	13	K2	CO5
			(OR)			
	b)		Identify and explain hardware units needed in digital camera.	13	K2	CO5

PART – C

(1 x 15 = 15 Marks)

Q.No.		Questions	Marks	KL	CO
16.	a)	Create the block diagram for the case study of embedded system for an adaptive Cruise Control Systems in a car.	15	K2	CO5
		(OR)			
	b)	With block diagram, explain the application of embedded system in ATM machine.	15	K2	CO5