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

Question Paper Code: 8012

B.E. / B.Tech. DEGREE END-SEMESTER EXAMINATIONS – MAY / JUNE 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.	List the important considerations when selecting a processor.	2	K1	CO1
2.	When is Application Specific System processors (ASSPs) used in an embedded system?	2	K2	CO1
3.	What are the classifications of I/O devices?	2	K2	CO2
4.	What do you meant by bus arbitration?	2	K2	CO2
5.	Compare the latency of the different methods of I/O.	2	K2	CO3
6.	Give an example of Intel instructions for managing interrupt system.	2	K2	CO3
7.	Define Inter process communication?	2	K2	CO4
8.	What are the different functions handled by a general purpose kernel?	2	K2	CO4
9.	Name some serial buses used in automotive communication.	2	K2	CO5
10.	What are the main elements inside a PIC?	2	K2	CO5

PART – B

(5 x 13 = 65 Marks)

Q.No.	Questions	Marks	KL	CO
11. a)	Compare features in a family chip (or core) of each of the following: a microprocessor, microcontroller, RISC processor and ASSP.	13	K3	CO1

(OR)

b)	i.	What do you mean by 'real time' and 'real time clock'? And also explain the role of processor reset and system reset?	7	K2	CO1
	ii.	What is the role of RAM in embedded systems?	6	K3	
12.	a)	Explain in detail about hot attachment and detachment. What are bus protocols of buses UART, RS232C, USB, Bluetooth, CAN and USB that support hot attachment and detachment?	13	K3	CO2
		(OR)			
	b)	Explain about the Internet and Wireless network protocols that are used in embedded system.	13	K2	CO2
13.	a)	i.	8	K2	CO3
		ii.	5	K4	
		(OR)			
	b)	i.	9	K2	CO3
		ii.	4	K2	
14.	a)	Describe the following:			CO4
		i.	7	K2	
		ii.	6	K2	
		(OR)			
	b)	Illustrate in detail about the VxWorks and its features with a suitable example.	13	K3	CO4
15.	a)	Apply suitable hardware and software to develop the embedded system design for a smart card.	13	K5	CO5
		(OR)			
	b)	Tabulate hardware units with specifications needed in each of the systems: Camera, Smart card, Automatic chocolate vending machine, Washing machine	13	K4	CO5

PART – C

(1 x 15 = 15Marks)

Q.No.	Questions	Marks	KL	CO
16.	a)			
	i.	10	K4	CO3
	ii.	5	K4	
	b)	15	K5	CO5