Hall Ticket Number :										

R-19

Code: 19A47ET

IV B.Tech. I Semester Supplementary Examinations March / April 2023

FPGA Architectures and Applications

(Electronics and Communication Engineering)

Max. Marks: 70 Time: 3 Hours

Answer *any five full questions* by choosing one question from each unit (5x14 = 70 Marks)

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			Marks	CO	BL
		UNIT–I			
1.	a)	Compare PLA, PAL and PLDs with respect to their features, programming and applications.	7M	1	5
	b)	Explain different elements in Altera Max 7000 CPLD with block diagram.	7M	2	2
		OR			
2.	a)	With neat sketch explain the Cypress Flash 370 device	7M	2	2
	b)	Discuss about Lattice PLSI's device in detail?	7M	2	2
		UNIT–II			
3.	a)	List the various applications of FPGAs.	4M	3	1
	b)	Explain different programming technologies in FPGA	10M	3	2
		OR			
4.	a)	Explain various Technology mapping in FPGAs	7M	3	2
	b)	Illustrate routing explain the routing used in symmetrical FPGAs	7M	3	4
		UNIT–III			
5.	a)	Explain the Xilinx XC4000 series architecture	10M	2	2
	b)	Compare the speed performance parameters of ACT-1, 2 and 3 FPGAs	4M	1	5
		OR			
6.	a)	Explain about ALTERs Flex 10k series FPGAs?	10M	2	2
	b)	Discuss the features of AT&T-ORCA's FPGAs	4M	2	2
		UNIT–IV			
7.	a)	Analyze the top down design approach of FSM	7M	3	4
	b)	Illustrate the basic concept of Petri nets for state machines	7M	3	3
		OR			
8.	a)	Explain about the alternative realization for state machine using micro programming	7M	3	2
	b)	Analyze One Hot State machine	7M	3	4
		UNIT–V			
9.		Explain FSM design centered around non-registered programmable logic devices	14M	1	2
		OR			
10.		Design parallel to serial adder /subtractor controller using one hot design	14M	3	6

END

Hall Ticket Number :										

R-19

Code: 19A373T

IV B.Tech. I Semester Supplementary Examinations March/April 2023

Management science

(Common to ECE & CSE)

Max. Marks: 70 Time: 3 Hours

Answer *any five full questions* by choosing one question from each unit (5x14 = 70 Marks)

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			Marks	CO	BL
		UNIT–I			
1.	a)	Discuss the Systems approach to the study of management.	7M	1	2
	b)	Bring out Henry Fayol's contribution to the science of management.	7M	1	2
		OR			
2.		What is the need for organization structure? State any four differences between formal and informal organization structures.	14M	1	2
		UNIT–II			
3.		What is plant layout? Discuss objectives and advantages of good layout	14M	2	2
		OR			
4.	a)	What are the methods of production?	7M	2	2
	b)	Explain various stages of product life cycle.	7M	2	2
		UNIT–III			
5.	a)	Elucidate the various methods of recruitment.	7M	3	2
	b)	Explain the objective of wage and salary administration.	7M	3	2
		OR			
6.		"Human resource management is like key function in management process" Justify your answer	14M	3	2
		UNIT–IV			
7.		Explain the function and role of financial Management in an Organization	14M	4	2
		OR			
8.		Explain and illustrate what you understand by network analysis. How would you compare PERT with CPM?	14M	4	2
		UNIT–V			
9.		What is Enterprise Resource Planning (ERP)? Explain the process ERP?	14M	5	2
		OR			
10.	a)	Describe the characteristics of Just-In-Time systems.	7M	5	2
	b)	Give a brief account of the evolution of ERP.	7M	5	2

END

Hall Ticket Number :											R-19

Code: 19A37ET / 19A37LT

IV B.Tech. I Semester Supplementary Examinations March/April 2023

Non-Conventional Sources of Energy

(Common to ME & ECE)

Max. Marks: 70 Time: 3 Hours

Answer *any five full questions* by choosing one question from each unit (5x14 = 70 Marks)

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			Marks	CO	BL
		UNIT–I			
1.	a)	Define Solar Constant and explain the terms Beam and Diffuse Solar radiation.	6M	CO1	L1
	b)	Calculate the angle made by beam radiation with the normal to a flat collector on July4, at 10 .00 AM Solar time for a location at $29^0$38' N. The collector is tilted at an angle of latitude plus 15^0, with the horizontal and is pointing due south.	8M	CO1	L3
		OR			
2.	a)	Explain about Terrestrial and Extra Terrestrial radiation.	6M	CO1	L2
	b)	Define the following: i. Zenith Angle ii. Incident angle iii. Latitude angle iv. Longitude angle.	8M	CO1	L1
		UNIT–II			
3.	a)	Explain different methods of storing solar energy.	7M	CO2	L2
	b)	What are the important performance indices of a solar collector? Explain them briefly.	7M	CO2	L2
		OR			
4.	a)	Explain photovoltaic energy conversion with its merits and demerits.	7M	CO2	L2
	b)	Explain solar water heating system with natural circulation and forced circulation.	7M	CO2	L2
		UNIT–III			
5.	a)	Explain the constructional features of drum and dome type biogas plants.	7M	CO3	L2
	b)	Explain Wet fermentation and Dry fermentation in detail.	7M	CO3	L2
		OR			
6.	a)	How are WEC systems classified? Discuss in brief.	8M	CO3	L1
	b)	Describe with a neat sketch the working of a wind energy system with its main components.	6M	CO3	L2
		UNIT–IV			
7.	a)	Explain the various methods to extract geothermal energy.	7M	CO4	L2
	b)	Explain the power generation from double cycle system for tidal energy utilization.	7M	CO4	L2
		OR			
8.	a)	Explain any two types Wave energy conversion systems.	8M	CO4	L2
	b)	Explain in detail about mini-hydel power plant.	6M	CO4	L2
		UNIT–V			
9.	a)	Explain Seebeck and Thompson effects.	4M	CO5	L2
	b)	Explain the principle of thermoelectric power generation with the help of a neat sketch.	10M	CO5	L2
		OR			
10.		Briefly describe the working principle and operation of H_2-O_2 fuel cell with a neat diagram?	14M	CO5	L2

END

Hall Ticket Number :											R-19

Code: 19A47CT

IV B.Tech. I Semester Supplementary Examinations March/April 2023

Wireless Communication & Networks

(Electronics and Communication Engineering)

Max. Marks: 70 Time: 3 Hours

Answer *any five full questions* by choosing one question from each unit (5x14 = 70 Marks)

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			Marks	CO	BL
		UNIT–I			
1.	a)	Tabulate the differences between TDMA and FDMA.	7M	1	L1
	b)	Describe the working mechanism of TDMA & FDMA with suitable diagrams.	7M	1	L1
		OR			
2.		Recite the role played by the Packet Radio Protocols in the past with its network architectures.	14M	1	L1
		UNIT–II			
3.	a)	Explain the working mechanism of circuit switching and packet switching in detail.	7M	2	L2
	b)	Explain the advantages of circuit switching over packet switching & packet switching over circuit switching.	7M	2	L2
		OR			
4.		Discus the ATM cell format and layers with suitable diagrams.	14M	2	L2
		UNIT–III			
5.		Examine the role of components for WAP Architecture with a suitable diagram.	14M	3	L3
		OR			
6.	a)	Examine the role of key mechanism in Mobile IP.	7M	3	L3
	b)	Illustrate the working mechanism of Mobile IP with a proper diagram with associated terminologies.	7M	3	L3
		UNIT–IV			
7.		Breakdown the Logical link control into applicable functions. Outline the fields of PDU with a format.	14M	4	L4
		OR			
8.		Analyze the components of EEE802.11 Protocol architecture. With a suitable diagram, explain the frame format for the same.	14M	4	L4
		UNIT–V			
9.		Justify the need of HIPERLAN-1. Elaborate the layers of its reference model.	14M	5	L5
		OR			
10.		Summarize the working mechanism for GPRS. Examine he need for different classes of GPRS terminal equipment.	14M	5	L5

****END****

Hall Ticket Number :										

R-19

Code: 19A471T

IV B.Tech. I Semester Supplementary Examinations March / April 2023

Embedded Systems

(Electronics and Communication Engineering)

Max. Marks: 70 Time: 3 Hours

Answer *any five full questions* by choosing one question from each unit (5x14 = 70 Marks)

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		Marks	CO	BL
	UNIT–I			
1. a)	Explain about MSP-430 architecture and its low power capability.	7M	1	2
b)	Discuss different modes of Timer for 8051 microcontroller.	7M	1	2
	OR			
2. a)	Draw and explain interfacing of LCD with 8051 controller. Write a program to display “Hello World” on LDC.	7M	1	5
b)	Design and develop an interfacing diagram of ADC with 8051 microcontroller and discuss its working operation.	7M	1	5
	UNIT–II			
3. a)	List the hierarchical components in an embedded system design? Discuss the function of each component in detail.	7M	2	2
b)	With respect to power, performance and cost state and explain the associated design metrics for an embedded system.	7M	2	2
	OR			
4. a)	Explain in brief the key characteristics of embedded systems.	7M	2	2
b)	Identify and describe hardware units and devices in embedded systems.	7M	2	2
	UNIT–III			
5. a)	What is watch timer? Explain its role in embedded system by considering appropriate examples.	7M	3	2
b)	Explain in detail the significance role of Real Time Clock (RTC) in embedded system.	7M	3	2
	OR			
6. a)	Describe in brief the process of generating executable image in an embedded system.	7M	3	2
b)	List various timers in embedded system and discuss in detail.	7M	3	4

UNIT–IV

7.	a)	Compare the limitations of SPI and I2C communication protocols.	7M	4	4
	b)	Illustrate about Bluetooth and IECE 802.11 external communication interfaces with neat sketch.	7M	4	4

OR

8.	a)	Discuss in detail about the serial communication protocol RS 232. What are the advantages of RS – 485 over RS -232 communication?	7M	4	4
	b)	Describe the CAN protocol bringing out the architecture, message formats and error detection on detail.	7M	4	4

UNIT–V

9.	a)	What is the difference between a general purpose kernel and real time kernel? Give an example for both?	7M	5	2
	b)	Explain in detail about TASK and Process in the operating system context?	7M	5	2

OR

10.	a)	What is semaphore? Explain the different types of semaphores. Where it is used?	7M	5	2
	b)	With a suitable illustration explain how the interrupt routines are handled by RTOS	7M	5	4

END