Code No: 80414 | MR18(2019-20) | HT.NO:

MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)

Maisammaguda, Dhulapally, (Post Via Kompally), Secunderabad-500100.

B.TECH III YEAR I SEMESTER REGULAR EXAMINATIONS, JANUARY-2022

SUBJECT: Microprocessors and Microcontrollers

BRANCH: ECE

Time: 3 hours | **Max. Marks: 70**

Answer all questions | **5X14M=70 M**

All Questions carries equal marks

Q.NO	QUESTIONS	MARKS	*BT LEVEL	CO
1.	a) Explain the pin configuration of 8085 microprocessor. b) Explain Demultiplexing of Address and data bus with the help of neat diagram.	7 7	L4	1
	OR			
2.	a) Define the terms: Fetch cycle, Execute cycle, Instruction cycle, Machine cycle. b) Interpret the flag register of 8085.	7 7	L2 L4	1
3.	a) Write an 8085 ALP to convert binary to ASCII and ASCII to binary. b) Differentiate between Arithmetic and logic operations with examples.	7 7	L2 L5	2
	OR			
4.	a) Write an 8085 ALP for Addition and subtraction. b) What are Assembler Directives? Explain looping and counting with example.	7 7	L2	2
5.	a) Draw and explain the read and write cycle timing diagrams of 8086 in maximum mode. b) Explain the physical memory organization of 8086 system.	7 7	L2 L4	3
	OR			
6.	a) Develop the internal architecture of 8086 with a neat block diagram. b) Explain the function of the following instructions. i) AAD ii) MOVSB iii) LAHF iv) JNS v) LEA vi) DAD	8 6	L2 L4	3
7.	a) Draw and explain the pin configuration of 8051 microcontroller. b) Differentiate between RISC and CISC.	7 7	L2 L5	4
	OR			
8.	a) Define the terms: i. Register banks ii. stack iii. Instruction set. b) Classify MCS-51 family based on their features.	 6 8	 L2 L5	4
9.	a) Draw and explain the timer/counter control logic diagram in 8051 microcontroller. b) Discuss about 8051 serial port programming.	7 7	L2	5
	OR			
10.	a) Give the RS 422 Standard details. b) What are the Registers used for interrupt initialization. c) Explain the terms: Interrupt Vs polling, Timer interrupts.	4 5 5	L2 L4	5

*Bloom's Taxonomy Level (BT Level): L1-Remember, L2- Understand, L3- Apply, L4- Analyse, L5- Evaluate, L6- Create.

Code No: 80415 | MR18(2019-20) | HT.NO:

MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)

Maisammaguda, Dhulapally, (Post Via Kompally), Secunderabad-500100.

B.TECH III YEAR I SEMESTER REGULAR EXAMINATIONS, JANUARY-2022

SUBJECT: Linear & Digital Integrated Circuit Applications

BRANCH: ECE

Time: 3 hours **Max. Marks: 70**

Answer all questions **5X14M=70 M**

All Questions carries equal marks

Q.NO	QUESTIONS	MARKS	*BT LEVEL	CO
1.	a) What are the Ideal and Practical characteristics of an op-amp? Explain the ideal voltage transfer curve.	7	L2	1
	b) Derive the expression for closed loop gain, input resistance and output resistance of an ideal inverting amplifier.	7	L3	
	OR			
2.	a) Discuss briefly about the AC-Characteristics of an Operational amplifier	7	L3	1
	b) Explain the operation of differential amplifier with its transfer characteristics.	7	L2	
3.	a) Draw the inverting and non-inverting amplifiers and Derive their Gains.	7	L3	2
	b) Discuss the need for an instrumentation amplifier? Give a detailed analysis for the same.	7	L3	
	OR			
4.	a) Draw Current to Voltage and Voltage to Current converter circuits using OP-Amp and explain.	7	L2	2
	b) Explain the monostable multivibrator using op-amp and derive the pulse width of the waveform.	7	L4	
5.	a) Draw the circuit diagram of a second order Butterworth active high pass filter and derive an expression for its transfer function	7	L2	3
	b) Explain the Astable mode of operation using 555 timer with neat diagram.	7	L2	
	OR			
6.	a) With a neat functional diagram, explain the operation of VCO. Also derive an expression for fo.	7	L3	3
	b) Draw and explain the operation of 2nd order narrow band pass filter with mathematical expressions.	7	L2	
7.	a) List and explain the characters tics of three terminal IC regulator.	7	L2	4
	b) Draw and explain dual slope analog to digital converter	7	L2	
	OR			
8.	a) Draw and explain the functional block diagram of a 723 regulator.	7	L2	4
	b) Compare the merits and demerits of different types of D/A converters. If the maximum output voltage of a 9-bit DAC is 25.4 V, what is the smallest change in the output as the binary count increases?	7	L4	

9.	a) Explain with a neat diagram the working of BCD to 7 segment Decoder. b) With neat sketch explain the operation of NAND gate using CMOS logic.	7 7	L2 L3	5
	OR			
10.	a) Explain with a neat diagram the working of 4-bit synchronous binary counter. b) Design a 4-bit comparator circuit and explain its operation.	7 7	L2 L4	5

*Bloom's Taxonomy Level (BT Level): L1-Remember, L2- Understand, L3- Apply, L4- Analyse, L5- Evaluate, L6- Create.

Code No: 80416 | MR18(2019-20) | HT.NO:

MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)

Maisammaguda, Dhulapally, (Post Via Kompally), Secunderabad-500100.

B.TECH III YEAR I SEMESTER REGULAR EXAMINATIONS, JANUARY-2022

SUBJECT: Data Communications and Computer Networks

BRANCH: ECE

Time: 3 hours | **Max. Marks: 70**

Answer all questions | **5X14M=70 M**

All Questions carries equal marks

Q.NO.	QUESTIONS	MARKS	*BT LEVEL	CO
1.	Compare the services, mechanisms and interfaces with respect to OSI and TCP/IP protocol suits.	14	L4	1
	OR			
2.	Analyze the circuit switching technology implementation in Telephone networks.	14	L4	1
3.	Apply and Show the generation of codeword at the sender site and check the same at the receiver site using CRC where data word is 1010011010 and the deviser is 10111.	14	L3	2
	OR			
4.	Build IEEE 802.3 protocol and its frame format.	14	L3	2
5.	What is the frame format, addressing mechanisms and access methods in standard Ethernet?	14	L2	3
	OR			
6.	Apply the process of distance vector routing in a suitable example and explain.	14	L3	3
7.	Analyze how connection established and terminated in TCP using three-way handshaking mechanism? Explain.	14	L4	4
	OR			
8.	Compare and contrast the UDP header and TCP header	14	L4	4
9.	Analyze how DNS service maps domain names to IP addresses	14	L4	5
	OR			
10.	Compare static, dynamic and active documents used in World Wide Web.	14	L4	5

*Bloom's Taxonomy Level (BT Level): L1-Remember, L2- Understand, L3- Apply, L4- Analyse, L5- Evaluate, L6- Create.

Code No: 80537 | MR18(2019-20) | HT.NO:

MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)

Maisammaguda, Dhulapally, (Post Via Kompally), Secunderabad-500100.

B.TECH III YEAR I SEMESTER REGULAR EXAMINATIONS, JANUARY-2022

SUBJECT: Computer Organization and Operating Systems

BRANCH: ECE

Time: 3 hours | **Max. Marks: 70**

Answer all questions | **5X14M=70 M**

All Questions carries equal marks

Q.NO.	QUESTIONS	MARKS	*BT LEVEL	CO
1.	a) Discuss the interconnection structure of a computer. b) Explain the different types of i) Computer. ii) Data representation in computer.	7 7	L2 L3	1
	OR			
2.	a) Discuss about logical and shift micro-operations. b) Define fixed point and floating point with example.	7 7	L2 L2	1
3.	a) Give the address sequencing mechanism in microprogrammed control. b) Explain RAID Technology	7 7	L2 L2	2
	OR			
4.	a) With the help of a diagram, clearly explain the functioning of a microprogrammed control unit. b) Compare hardwired control and microprogrammed control unit.	7 7	L3 L2	2
5.	Discuss the peripheral devices of input- output organization in detail.	14	L4	3
	OR			
6.	a) Explain parallel priority interrupt handling method, with neat diagram and also give priority encodes. b) Describe the operation of DMA controller with block diagram.	7 7	L3 L2	3
7.	a) Explain the difference between internal and external fragmentation. b) Why are segmentation and paging sometimes combined into one scheme?	7 7	L2 L3	4
	OR			
8.	Illustrate bankers algorithm with an example.	14	L3	4
9.	a) Consider a file system where a file can be deleted and its space reclaimed while links to that file still exist. What problems may occur if a new file is created in the same storage area or with the same absolute path name? How can these problems be avoided? b) Detail the schematic view of a virtual file system	 9 5	 L4 L2	5
	OR			
10.	Elaborate different Allocation methods.	14	L3	5

*Bloom's Taxonomy Level (BT Level): L1-Remember, L2- Understand, L3- Apply, L4- Analyse, L5- Evaluate, L6- Create.

Code No: 80512 | MR18(2019-20) | HT.NO:

MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)

Maisammaguda, Dhulapally, (Post Via Kompally), Secunderabad-500100.

B.TECH III YEAR I SEMESTER REGULAR EXAMINATIONS, JANUARY-2022

SUBJECT: DBMS

BRANCH: ECE

Time: 3 hours | **Max. Marks: 70**

Answer all questions | **5X14M=70 M**

All Questions carries equal marks

Q. NO.	QUESTIONS	MARKS	*BT LEVEL	CO
1.	a) Discuss Data Manipulation Language.	4	L3	1
	b) Discuss Data Definition Language.	4	L3	
	c) Differentiate file Systems with database systems.	6	L4	
	OR			
2.	a) Distinguish between strong entity set and weak entity set.	5	L4	1
	b) Illustrate weak entity set with an ER diagram.	5	L2	
	c) Discuss about the logical database Design.	4	L3	
3.	a) Illustrate Group by and Having clauses with examples.	7	L4	2
	b) Discuss different types of aggregate operators with examples in SQL.	7	L2	
	OR			
4.	a) Differentiate between Tupple Relational Calculus and Domain Relational Calculus.	7	L4	2
	b) Explain different types of Joins with examples.	7	L2	
5.	a) Explain about Schema refinement in Database design.	7	L2	3
	b) Illustrate Multivalued dependencies and Fourth normal form with example.	7	L2	
	OR			
6.	a) Illustrate BCNF normal form.	7	L2	3
	b) Explain Normalization.	7	L2	
7.	a) Explain Transaction model.	6	L2	4
	b) Demonstrate the implementation of Isolation.	4	L3	
	c) Describe Validation-based locking protocols.	4	L2	
	OR			
8.	a) Illustrate ACID properties with examples.	7	L2	4
	b) Describe Timestamp based locking protocols.	7	L2	
9.	a) Differentiate Hash based Indexing and Tree based Indexing.	7	L4	5
	b) Demonstrate the operations of B+ trees with example.	7	L4	
	OR			
10.	a) Write in detail about Static Hashing.	7	L2	5
	b) Compare the File Organizations.	7	L2	

*Bloom's Taxonomy Level (BT Level): L1-Remember, L2- Understand, L3- Apply, L4- Analyse, L5- Evaluate, L6- Create.

Code No: 80606 | MR18(2019-20) | HT.NO:

MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)

Maisammaguda, Dhulapally, (Post Via Kompally), Secunderabad-500100.

B.TECH III YEAR I SEMESTER REGULAR EXAMINATIONS, JANUARY-2022

SUBJECT: Python Programming

BRANCH: COMMON TO ECE&IT

Time: 3 hours | **Max. Marks: 70**

Answer all questions | **5X14M=70 M**

All Questions carries equal marks

Q.NO.	QUESTIONS	MARKS	*BT LEVEL	CO
1.	a) Write a short note on history and Explain about the need for learning python programming and its importance. b) Define python? Describe the feature of python.	8 6	L2	1
	OR			
2.	a) Define variable in python and list the rules of python variables? Write a python program to create variables in terms of integer, float and string? b) Explain the basics for executing a python program using REPL(Shell) with an example.	8 6	L2& L3 L2	1
3.	a) What are the different loop control statements available in python? Explain with suitable examples. b) What are the different types of operators used to evaluate Boolean expression?	8 6	L2 L2	2
	OR			
4.	a) Explain If _else statement in python with syntax, flowchart and example. b) Write a python program to print "Hello" to print 5 times. c) Explain about Membership operators in python with appropriate example.	4 4 6	L2 L3 L2	2
5.	a)What is Sequences in Python? Explain its operation with suitable examples. b) Differentiate between list, tuple, set and dictionary with one example each.	6 8	L2 L4	3
	OR			
6.	a) Define function with syntax? Write a python function using with parameter and return type? b) Write a python program using function to the print the value of x as local and global?	8 6	L2 L3	3
7.	a) Describe Python OOPs Concepts? Write a python Program to display Hello by using classes and objects. b) Define Module. How to create a module and use it in a python program. Explain with an example.	8 6	L2 L2	4
	OR			
8.	a) How does try-except statement work? Demonstrate with an example python code. b) Define inheritance and list out different types of inheritances?	8 6	L2 L2	4

9.	a) What is Multithreading? Explain briefly about thread and threading module objects in Python. b) Why testing is required. Discuss the basic concepts of Testing.	8 6	L2 L2	5
	OR			
10.	a) What is testing? Explain how to write testcases and running test cases. b) What is pattern matching? Explain various string pattern matching functions.	7 7	L2 L2	5

*Bloom's Taxonomy Level (BT Level): L1-Remember, L2- Understand, L3- Apply, L4- Analyse, L5- Evaluate, L6- Create.