Q.P. Code: 20EC0401 **R20**

Reg. No: | | | | | | | | | | |

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B. Tech I Year II Semester Regular Examinations November-2021

FUNDAMENTALS OF DIGITAL COMPUTING SYSTEMS

(Electronics and Communication Engineering)

Time: 3 hours Max. Marks: 60

(Answer all Five Units **5 x 12 = 60** Marks)

UNIT-I

1	a	Discuss about early history and modern computer development.	L2	4M
	b	Describe the features of IBM -Z series mainframe computers.	L3	4M
	c	Justify why Protocols and standards are an important feature of networks	L5	4M
		OR		
2	a	For the computer that you normally use, identify which pieces constitute the hardware and which pieces constitute the system software. Now think about the file system of your computer. What part of the file system is hardware, what part software, and what part data? Explain.	L4	6M
	b	List the types of computers and write short notes of each computer.	L1	6M

UNIT-II

3	a	With an example, discuss the relationship between a system and its environment.	L2	6M
	b	Write a short note on top-down approach in IT system architecture.	L2	6M
		OR		
4	a	Describe the advantages of client-server computing with some examples.	L2	4M
	b	Why web-based system architecture is a popular approach to many organizational systems? Justify your answer with an example.	L5	8M

UNIT-III

5	a	Convert the following numbers from decimal to binary and then to hexadecimal: (i) (27.625)10 (ii) (4192.37761)10	L2	6M
	b	Convert the following hexadecimal numbers to binary: (i) (4F6A)16 (ii) (9902)16 (iii) (A3AB)16	L2	6M
		OR		
6	a	Infer the values after multiplying the following binary numbers: (i) (1101)2 × (101)2 (ii) (11011)2 × (1011)2	L4	6M
	b	Convert the following numbers from their given base to decimal: (i) (0.1001001)2 (ii) (0.3A2)16 (iii) (0.2A1)12	L2	6M

UNIT-IV

7	a	Briefly explain the three standards that are used in common for alphanumeric characters.	L2	6M
	b	With a neat sketch, explain the bitmap image storing format GIF.	L2	6M
		OR		
8	a	With a neat sketch, describe how an A-to-D converter converts audio data into binary data.	L2	6M
	b	Define page description language and enumerate various page description languages.	L2	6M

UNIT-V

9	a	The IEEE provides a standard 32-bit format for floating point numbers. The format for a number is specified as ±1.M × 2E − 127. Explain each part of this format.	L2	6M
	b	Explain the procedure for adding two numbers in 2's complement form. As an example, convert +38 and −24 to 8-bit 2's complement form and add them.	L2	6M

OR

10	a	Convert the following decimal numbers into BCD and calculate the value by adding them: 24 and 37.	L2	6M
	b	Calculate the result by performing addition of the following two floating point numbers and round the result to five places of precision. i) 05199520 + 04967850 ii) 625.2035 + 25.7585 iii) 1024.775E2 + 512.225E0	L3	6M

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