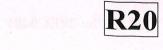
Q.P. Code: 20EC0401



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		SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTU	R	
		(AUTONOMOUS)		
		B. Tech I Year II Semester Regular Examinations November-2021		
		FUNDAMENTALS OF DIGITAL COMPUTING SYSTEMS		
	Tim	(Electronics and Communication Engineering) e: 3 hours	av M	larks: 6
	1 111		ал. IV]	larks. O
		(Answer all Five Units $5 \times 12 = 60$ Marks)		
1		UNIT-I	10	43.4
1		Discuss about early history and modern computer development.	L2	4M
	D	Describe the features of IBM -Z series mainframe computers.	L3	4M
	c	Justify why Protocols and standards are an important feature of networks OR	L5	<b>4M</b>
2	a	For the computer that you normally use, identify which pieces constitute the	L4	6M
		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.		
	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		Describe the advantages of client-server computing with some examples.	L2	<b>4M</b>
	b	Why web-based system architecture is a popular approach to many organizational	L5	<b>8M</b>
		systems? Justify your answer with an example.		
		UNIT-III		
5	a	Convert the following numbers from decimal to binary and then to hexadecimal:	L2	6M
		(i) (27.625)10 (ii) (4192.37761)10		<i>(</i> <b>)</b> <i>(</i>
	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:	L4	6M
		(i) $(1101)2 \times (101)2$ (ii) $(11011)2 \times (1011)2$		
	b	Convert the following numbers from their given base to decimal:	L2	6M
		(i) (0.1001001)2 (ii) (0.3A2)16 (iii) (0.2A1)12 UNIT-IV		
7	a	Briefly explain the three standards that are used in common for alphanumeric	L2	6M
		characters.		
	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	L2	6M
		binary data.		
	b	Define page description language and enumerate various page description	L2	6M
		languages.		

# **R20**

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## UNIT-V

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

### OR

- 10 a Convert the following decimal numbers into BCD and calculate the value by adding L2 6M them: 24 and 37.
  - b Calculate the result by performing addition of the following two floating point L3 6M numbers and round the result to five places of precision.

i) 05199520 + 04967850 ii) 625.2035 + 25.7585 iii) 1024.775E2 + 512.225E0

#### \*\*\* END \*\*\*