

Code No: 7CC55

Date: 17-Aug-2021 (Fri)

B.Tech II-Year II- Semester External Examination, Aug/Sept-2021 (Regular)
DIGITAL ELECTRONICS (CSE and IT)

Time: 3 Hours

Max.Marks:70

Note: a) No additional answer sheets will be provided.
b) All sub-parts of a question must be answered at one place only, otherwise it will not be valued.
c) Missing data can be assumed suitably.

ANSWER ANY 5 OUT OF 8 QUESTIONS. EACH QUESTION CARRIES 14 MARKS.

Bloom's Cognitive Levels of Learning (BCLL)

Remember	L1	Apply	L3	Evaluate	L5
Understand	L2	Analyze	L4	Create	L6

		BC LL	CO(s)	Marks
1.	a) Simplify the following Boolean expression to minimum number of literals $(A+B)' (A'+B')$ Convert $(16.5)_{16}$ to decimal.	L6	CO1	[7M]
	b) Explain briefly about self complementing codes.	L2	CO1	[7M]
2.	a) Determine the minimal sum of product form of using Quine-McClukey method. $f(w, x, y, z) = \sum m(4, 5, 7, 12, 14, 15) + \emptyset(3, 8, 10)$.	L5	CO2	[7M]
	b) Simplify the following Boolean function $f(W,X,Y,Z) = \sum m(2,6,8,9,10,11,14,15)$.	L6	CO2	[7M]
3.	a) Discuss in detail about a Demultiplexer with an example	L2	CO3	[7M]
	b) Design a BCD to Gray code converter using 8:1 multiplexers.	L6	CO3	[7M]
4.	a) Explain the operation of positive triggered D flip flop with the help of a circuit diagram.	L2	CO4	[7M]
	b) Design an master slave JK flip-flop with necessary diagrams.	L4	CO4	[7M]
5.	a) Explain about Serial addition in 4-bit shift register.	L2	CO5	[7M]
	b) Design a 4-bit binary UP/DOWN ripple counter.	L4	CO5	[7M]
6.	a) What is a programmable device? How it differs from ROM?	L1	CO6	[7M]
	b) Explain in detail about sequential memory.	L2	CO6	[7M]
7.	a) Demonstrate Error detection with an example.	L3	CO1	[5M]
	b) What do you mean by prime implicant chart? Explain.	L1	CO2	[5M]
	c) Design a 4-bit adder circuit using logic gates.	L4	CO3	[4M]
8.	a) Implement a JK flip flop using SR flip flop.	L4	CO4	[5M]
	b) Classify types of registers and define them.	L3	CO5	[5M]
	c) Discuss about SRAM and its usage.	L2	CO6	[4M]

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