Paper / Subject Code: 40623 / Digital Electronics

May 21, 2024   02:30 pm - 05:30 pm   1T00834 - S.E.(Electrical)(Choice Based) (R-2020-21) (C Scheme)(Sem-IV) / 40623 - Digital Electronics   QP CODE: 10055378

Duration: 3hrs   **Total Marks:80**

N.B.:   (1) Question No 1 is Compulsory.
       (2) Attempt any three questions out of the remaining five.
       (3) All questions carry equal marks.
       (4) Assume suitable data, if required and state it clearly.

1	Attempt **any FOUR**	**[20]**
a	Convert $(1110010.1010)_2 = (?)_{16}(?)_8$ $(?)_{10}(?)_{gray}$ $(?)_{xs-3code}$	**[5]**
b	Implement 8:1 Mux with 4:1 Mux	**[5]**
c	What is latch? How a latch is different from flip flop?	**[5]**
d	Compare SRAM and DRAM	**[5]**
e	Compare PLA and PAL	**[5]**
2 a	$F(p,q,r,s)=\sum m\ (0,2,5,6,8,9,11,13)$ +d(3,7,15) solve using K-map	**[10]**
b	Explain the sample and hold circuit.	**[10]**
3 a	Explain the MasterSlave JK flipflop.	**[10]**
b	Explain the classification and characteristics of memory.	**[10]**
4 a	Design the 4 bit Asynchronous counter.	**[10]**
b	Implement 3 bit binary to gray converter using NAND gate	**[10]**
5 a	What is universal shift register ? Draw the circuit and explain its working.	**[10]**
b	Explain the 3 bit R-2R D/A converter	**[10]**
6 a	Implement the T to D flip flop and JK to SR	**[10]**
b	Short on **any two**:	**[10]**

      i) Dual slop A to D converter

      ii) FPGA

      iii) Shift Register

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