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| First Internal Test | | | | | | | | | | | | | | |
| Sub: | | Analog and Digital Electronics | | | | | | | Code: | | 17CS32 | | | |
| Date: | | 07/ 09 / 2018 | Duration: | 90 mins | Max Marks: | 50 | Sem: | III | Branch: | | **CSE** | | | |
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| **Answer COMPULSARILY** | | | | | | | | | | Marks | | | OBE | |
| CO | RBT |
| 1 . | Simplify the following expression using Quine –McCluskey’s method  F(A,B,C,D)= Σm(0,1,2,3,10,11,12,13,14,15). | | | | | | | | | [10] | | | CO2 | L3 |
|  | **Answer Any FOUR FULL Questions** | | | | | | | | |  | | |  |  |
| 2 (a) | Obtain the simplified Boolean equation by using K-map method and express it in SOP form. Realize logic circuit by using NAND gates only  F(A,B,C,D)=Σm(7,9,10,11,12,13,14,15). | | | | | | | | | [06] | | | CO2 | L3 |
| (b) | Find the minimal product using K-map for the Boolean function  F(A,B,C,D)= Σm(6,7,9,10,13)+d(1,4,5,11). | | | | | | | | | [04] | | | CO2 | L2 |
| 3 (a) | Design a 2 bit magnitude comparator using gates. | | | | | | | | | [06] | | | CO3 | L3 |
| (b) | Write a note on Static -1 hazard and hazard cover. | | | | | | | | | [04] | | | CO2 | L1 |

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| First Internal Test | | | | | | | | | | | | | | | | | | | | | | | |
| Sub: | | | | Analog and Digital Electronics | | | | | | | | Code: | | | | 17CS32 | | | | | | | |
| Date: | | | | 07/ 09 / 2018 | | Duration: | 90 mins | Max Marks: | 50 | Sem: | III | Branch: | | | | **ISE** | | | | | | | |
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| **Answer COMPULSARILY** | | | | | | | | | | | | | Marks | | | | | | OBE | | | | |
| CO | | | RBT | |
| 1 . | | | Simplify the following expression using Quine –McCluskey’s method  F(A,B,C,D)= Σm(0,1,2,3,10,11,12,13,14,15). | | | | | | | | | | [10] | | | | | | CO2 | | | L3 | |
|  | | | **Answer Any FOUR FULL Questions** | | | | | | | | | |  | | | | | |  | | |  | |
| 2 (a) | | | Obtain the simplified Boolean equation by using K-map method and express it in SOP form. Realize logic circuit by using NAND gates only  F(A,B,C,D)=Σm(7,9,10,11,12,13,14,15). | | | | | | | | | | [06] | | | | | | CO2 | | | L3 | |
| (b) | | | Find the minimal product using K-map for the Boolean function  F(A,B,C,D)= Σm(6,7,9,10,13)+d(1,4,5,11). | | | | | | | | | | [04] | | | | | | CO2 | | | L2 | |
| 3 (a) | | | Design a 2 bit magnitude comparator using gates. | | | | | | | | | | [06] | | | | | | CO3 | | | L3 | |
| (b) | Write a note on Static -1 hazard and hazard cover. | | | | | | | | | | | | | [04] | | CO2 | | | | L1 | | |
| 4 (a) | | | | Construct a 16:1 multiplexer using 4 to 1 and 2 to 1multiplexers. | | | | | | | | | [05] | | | | | | CO3 | | | L3 | |
| (b) | | | | Implement the given Boolean function by using 8:1 multiplexer.  F(A,B,C,D) = Σm(0,1,3,5,7,11,12,13,14) | | | | | | | | | [05] | | | | | | CO3 | | | L3 | |
| 5 | | | | Design a 4 bit priority Encoder. | | | | | | | | | [10] | | | | | | CO3 | | | L3 | |
| 6 (a) | | | | Explain the working of 1:4 demultiplexers. | | | | | | | | | [04] | | | | | | CO3 | | | L2 | |
| (b) | | | | Implement a full adder using 3 to 8 decoders | | | | | | | | | [06] | | | | | | CO3 | | | L2 | |
| 7 | | | | Implement a PLA circuit having 3 inputs, 3 product terms and two outputs for the given Boolean functions f1=Σm(1,3,5) and f2=Σm(5,6,7). | | | | | | | | | [10] | | | | | | CO3 | | | L3 | |

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| 4 (a) | Construct a 16:1 multiplexer using 4 to 1 and 2 to 1multiplexers. | [05] | CO3 | L3 |
| (b) | Implement the given Boolean function by using 8:1 multiplexer.  F(A,B,C,D) = Σm(0,1,3,5,7,11,12,13,14) | [05] | CO3 | L3 |
| 5 | Design a 4 bit priority Encoder. | [10] | CO3 | L3 |
| 6 (a) | Explain the working of 1:4 demultiplexers. | [04] | CO3 | L2 |
| (b) | Implement a full adder using 3 to 8 decoders | [06] | CO3 | L2 |
| 7 | Implement a PLA circuit having 3 inputs, 3 product terms and two outputs for the given Boolean functions f1=Σm(1,3,5) and f2=Σm(5,6,7). | [10] | CO3 | L3 |