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| **KLS Gogte Institute of Technology**  **Department of Computer Science and Engineering**  **IA- I**  **Subject : Logic Design and Applications Code : 15CS32 Semester : III Division : A,B,C, D Date: 1/9/2016 Time: 1pm-2pm Max. Marks: 25** |
| **Note: i) Answer all questions.**  **ii) All questions carry *five* marks**   1. Solve the given Boolean function using Boolean algebra and realize using the basic gates.   **Y(A,B,C)= AB+A(B+C)+B(B+C) [L3,PO 1,2]**   1. Write the simplified SOP expression for the given Boolean function using K-Map reduction technique.   **F(A,B,C)=∑m(0,1,2,4,5) +∑d(3,6,7) [L3 PO 1,2,3]**   1. Explain Quine Mc Clusky reduction technique with reference to the below expression**.**   **F(A,B,C,B) = ∑m(1,3,4,5,7,8,15) [L2, PO 1,2,3]**   1. Define multiplexer. Design 8-to-1 multiplexer for the given Boolean function.   **F(A,B,C)=AB+BC+ABC [L1,L3, PO 1,2]**   1. Define decoder. Illustrate how 3-to-8 line decoder and multi input OR gates can be used to realize the following Boolean expressions   **F1(A,B,C)=∑m(0,4,6)**  **F2(A,B,C)=∑m(0,5)**  **F3(A,B,C)=∑m(1,2,3,7)**  **[L1,L3 PO 1,2,3]** |