

Submit a single PDF file online (Canvas) by 10:50 a.m., 2/23 (Tuesday).

You must show how you get your answer in each problem. The final answer only will receive no credit.

1. Use K-maps to find the minimal SOP and minimal POS expressions for each of the following functions:

(i) $G(a,b,c,d) = \sum m(0,1,2,3,7,8,9,12,13,14)$

(ii) $H(a,b,c,d) = \prod M(4,5,6,7,13,15)$

2. Use K-maps to find the minimal SOP and minimal POS expressions for each of the following functions:

(i) $f(a,b,c,d) = \sum m(1,5,7,9) + d(6,13)$

(ii) $g(a,b,c,d) = \prod M(3,6,8,9,14) \cdot D(1,2,4,7,11,12,13)$

3. Plot the following function on a K-map: $f(A,B,C) = \bar{A}\bar{B} + \bar{B}C + \bar{A}C$

4. Draw the circuit diagram realizing each of the minimal SOP and minimal POS expressions for the function, $G(a,b,c,d) = \sum m(0,1,2,3,7,8,9,12,13,14)$. You may use gates of any type and size.