Subject: 2101CS303 – Digital Fundamentals

Examples for Practice

Q-1 Reduce using K-Map: f = $\prod_M(2,8,9,10,11,12,14)$ **[Ans. f = (A'+B) (A'+D) (B+C'+D)]**

Q-2 Reduce using K-Map: f = $\prod_M(0,1,2,6,8,10,11,12)$ **[Ans. f = (A'+C+D) (A'+B+C') (A+B+C) (A+C'+D)]**

Q-3 Reduce using K-Map: f = $\sum_m(1,4,7,10,13) + d(5,14,15)$ **[Ans. f = BD + A'BC' + A'C'D + ACD']**

Q-4 Reduce using K-Map: f = $\sum_m(4,5,7,12,14,15) + d(3,8,10)$ **[Ans. f = AD' + A'BC' + BCD]**

Q-5 Reduce using K-Map: f = $\sum_m(6,7,8,9) + d(10,11,12,13,14,15)$ **[Ans. f = A + BC]**

Q-6 Reduce using K-Map: f = $\prod_M(1,4,5,11,12,14) \cdot d(6,7,15)$ **[Ans. f = (B'+D) (A+C+D') (A'+C'+D')]**

Q-7 Reduce using K-Map: f = $\prod_M(3,6,8,11,13,14) \cdot d(1,5,7,10)$

[Ans. f = (A'+B+D) (B'+C+D') (B'+C'+D) (B+C'+D')]

Q-8 Reduce using K-Map: f = $\sum_m(0,1,4,5,6,7,9,11,15) + d(10,14)$ **[Ans. f = A'C' + BC + AB'D]**

Q-9 Reduce using K-Map: f = $\sum_m(9,10,12) + d(3,5,6,7,11,13,14,15)$ **[Ans. f = AB + AD + AC]**

Q-10 Reduce using K-Map: f = $\sum_m(0,2,3,4,7,9,15) + d(6,8,11)$ **[Ans. f = CD + A'D' + AB'C']**

Q-11 Reduce using K-Map: f = $\sum_m(1,5,6,12,13,14) + d(2,4)$ **[Ans. f = BD' + BC' + A'C'D]**