

Name
Roll no
Section

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2020640
2-B

iv)

	CD'	$C'D$	CD	CD'
$A'B'$	m_0 1	m_1 1	m_3	m_2 1
$A'B$	m_4	m_5 1	m_7 1	m_6
AB	m_{12}	m_{13} 1	m_{15} 1	m_{14}
AB'	m_8 1	m_9 1	m_{11}	m_{10} 1

$$= P'B' + C'D + BD + ABD + A'BD + A'B'D + AB'D + C'D'B + BCD'B' + A'C'D + BCD + ACD$$

i)

$$F(A,B) = \sum (2,3)$$

$$F(A,B) = (m_2, m_3)$$

	B'	B
A'	m_0	m_1
A	m_2 1	m_3 1

$$\text{Output} = A \rightarrow \text{output} = A$$

$$\text{ii) } F(A,B,C) = \sum (2,3,6,7)$$

$$= (m_2, m_3, m_6, m_7)$$

	$B'C'$	$B'C$	BC	BC'
A'	m_0	m_1	m_2 1	m_3 1
A	m_4	m_5	m_6 1	m_7 1

$$\text{output} = C$$

$$iii) F(A, B, C, D) = \sum (0, 2, 5, 7, 8, 10, 14, 15)$$

$$F(A, B, C, D) = m_0, m_2, m_5, m_7, m_8, m_{10}, m_{14}, m_{15}$$

	$C'D'$	$C'D$	CD	CD'
$A'B'$	m_0 1	m_1	m_3	m_2 1
$A'B$	m_4	m_5 1	m_7 1	m_6
AB	m_{12}	m_{13}	m_{15} 1	m_{14} 1
AB'	m_8 1	m_9	m_{11}	m_{10} 1

$$= D'B' + A'BD + BCD + ABC$$

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