**Question 2. (20 points)**

Use Boolean algebra to solve the following questions. Show clearly all your steps.

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| 1. Simplify each of the following Boolean functions to the specified number of literals:      1. **(2 literals) (2 points)** 2. **(2 literals) (4 points)** 3. **(1 literal) (4 points)** 4. **(3 literals) (3 points)** |
| 1. Given the Boolean function : **(5 points)** 2. Express F as a **product-of-maxterms**, . 3. Find the ***algebraic* sum-of-minterms** expression for *F*.      1. Given the following Boolean function expressed using sum-of-products representation. , express F as a product-of-sums (NOT as product-of-maxterms) representation. **(2 points)** |
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