Logic Design – Assignment 04

#	Student ID	Student Name	Grade (10)
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Delivery Date	

١. يتم تسليم التمرين محلولا في خلال أسبوع من تاريخ التمرين، و يتم حذف درجتين من التمرين عن كل أسبوع تأخير
٢. يتم التسليم لمعيد المقرر مباشرة
٣. تتم أجابه التمرين في نفس ورق الأسئلة

Q 1	Demonstrate the validity of the following identities by means of truth tables: (c) The distributive law: $x(y + z) = xy + xz$ (d) The associative law: $x + (y + z) = (x + y) + z$ (e) The associative law and $x(yz) = (xy)z$
Sol 1	.....

Q2	Simplify the following Boolean expressions to a minimum number of literals: (b)* $(x + y)(x + y')$ (d)* $(A + B)'(A' + B')'$ (f) $(x + y + z')(x' + y' + z)$
Sol 2	.....

Q3	Simplify the following Boolean expressions to a minimum number of literals: (b)* $x'yz + xz$ (d)* $xy + x(wz + wz')$ (f) $(x + y' + z')(x' + z')$
Sol 3	…… ……

Q4	Reduce the following Boolean expressions to the indicated number of literals: (c)* $A'B(D' + C'D) + B(A + A'CD)$ to one literal (d)* $(A' + C)(A' + C')(A + B + C'D)$ to four literals (e) $ABCD + A'BD + ABC'D$ to two literals
Sol 4	.....

Q5	Draw logic diagrams of the circuits that implement the original and simplified expressions in Q2 (b)* $(x + y)(x + y')$ (d)* $(A + B)'(A' + B')'$ (f) $(x + y + z')(x' + y' + z)$
Sol 5	.....

Q6	Draw logic diagrams of the circuits that implement the original and simplified expressions in Q3 (b)* $x'yz + xz$ (d)* $xy + x(wz + wz')$ (f) $(x + y' + z')(x' + z')$
Sol 6	.....

Q7	Draw logic diagrams of the circuits that implement the original and simplified expressions in Q4 (c)* $A'B(D' + C'D) + B(A + A'CD)$ to one literal (d)* $(A' + C)(A' + C')(A + B + C'D)$ to four literals (e) $ABCD + A'BD + ABC'D$ to two literals
Sol 7	.....