

Taibah University College of Computers science and Engineering		Date: Thur. 13 Oct. 2022 Time: 9:00 — 10:00
تصميم المنطق الرقمي COE 211 YCSB2 – Midterm		Total Marks: 30

1. Convert the signed decimal number -14 to binary equivalent	2. What is the largest signed decimal number that can be expressed with 4-bits? What is the equivalent hexadecimal numbers?
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Add the following numbers **without converting** them to decimal.

3. A001H + 3FFFH	4. 1101 + 0111 (Binary)
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Obtain the r-1's complement of the following numbers (Note that **r: Radix**)

5. 00010000 (Binary)	6. A25FH
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7. Represent decimal number 31 in unsigned binary form	8. Represent decimal number -53 in 8-bit signed binary form
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9. Represent decimal number 10 in BCD	10. Represent decimal number 52 in Gray code
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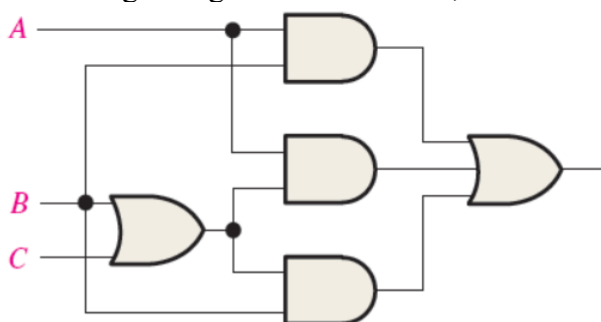
11. Simplify For the Boolean equation

$$F = AB + A\bar{B} + \bar{A}B + \bar{A}\bar{B}$$

12. For the Boolean equation $F = \bar{Y} + XY$

- Construct the Truth table
- Sketch the Logic diagram
- Simplify the Equation

13. For the logic diagram shown below, obtain



- Boolean equation
- Construct the truth table

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