**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Id: \_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. Determine the representation of (31 )10 using the following code 642-3 (1)

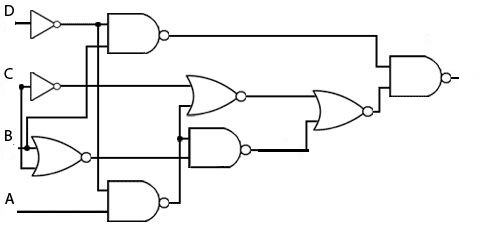
|  |
| --- |
|  |
|  |
|  |
|  |

1. Add the following two BCD numbers, (0110 0101 0101) + (0100 0100 0101) (3)

|  |
| --- |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |

1. Calculate the propagation delay of the following logic diagram (1)

Knowing the propagation delay of the following gates: NOT gate=3nsec AND gate & OR gate=10 nsec NAND gate & NOR gate=13 nsec XOR gate=20nsec XNOR gate=23 nsec



1. Draw the logic diagram for the following function after simplification using k-map,

F(A,B,C,D)= m(0,2,8,10)+d(5,7,9,11) as PoS (5)

|  |
| --- |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |

|  |
| --- |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |

|  |
| --- |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |