| **1.CO1** | Add -67 with -75 in 11 bits using 2’s complement system. Justify whether there is overflow or not. |
| --- | --- |
| **2.CO1** | Suppose, you need (65554)8 taka as a reservation fee to reserve the “Elevated Evening” resort. Furthermore, you need to pay (47B8)16 taka per room. You have decided to rent (0011)BCD rooms. You also need to pay (110001001110)2 taka for using the field at the resort. Apart from these, you need to spend some money for using the swimming pool too. Including pool, the total cost becomes (512151)7 taka. So (how much)10 do you need to spend on using the swimming pool? |
| **3.CO1** | **Perform** the following conversion: (579.16)**10** = ( ? )**Excess-5** |

**1**

67 = 1000011

+67 = 01000011

+67 in 11 bits = 00001000011

11110111100

+1

\_\_\_\_\_\_\_\_\_\_\_\_

-67 in 11 bits = 11110111101

75 = 1001011

+75 = 01001011

+75 in 11 bits = 00001001011

11110110100

+1

\_\_\_\_\_\_\_\_\_\_\_\_

-75 in 11 bits = 11110110101

**11110111101**

**11110110101**

\_\_\_\_\_\_\_\_\_\_\_\_

**111101110010** (No Overflow as adding two negatives should produce a negative number)

**2**

Do the conversions yourself

reservation fee = 27500

Room fee = 3x18360

Field = 3150

total cost = 87207

**Money needed for using Swimming Pool =**

**87207 - (27500 + 3x(18360) + 3150) = 87207 - 85730 = 1477**

**3**

(579.16)**10** = (**1010**1100**1110**.0110**1011**)**Excess-5**

| **1.CO1** | Add -59 with -83 in 11 bits using 2’s complement system. Justify whether there is overflow or not. |
| --- | --- |
| **2.CO1** | Suppose, you need (331152)6 taka as a reservation fee to reserve the “Daunting Dawn” resort. Furthermore, you need to pay (104346)7 taka per room. You have decided to rent (0011)BCD rooms. You also need to pay (C4E)16 taka for using the field at the resort. Apart from these, you need to spend some money for using the swimming pool too. Including pool, the total cost becomes (10101010010100111)2 taka. So (how much)10 do you need to spend on using the swimming pool? |
| **3.CO1** | **Perform** the following conversion: (468.27)**10** = ( ? )**Excess-4** |

**1**

59 = 111011

+59 = 0111011

+59 in 11 bits = 00000111011

11111000100

+1

\_\_\_\_\_\_\_\_\_\_\_\_

-59 in 11 bits = 11111000101

83 = 1010011

+83 = 01010011

+83 in 11 bits = 00001010011

11110101100

+1

\_\_\_\_\_\_\_\_\_\_\_\_

-83 in 11 bits = 11110101101

**11111000101**

**11110101101**

\_\_\_\_\_\_\_\_\_\_\_\_

**111101110010** (No Overflow as adding two negatives should produce a negative number)

**2**

Do the conversions yourself

reservation fee = 27500

Room fee = 3x18360

Field = 3150

total cost = 87207

**Money needed for using Swimming Pool =**

**87207 - (27500 + 3x(18360) + 3150) = 87207 - 85730 = 1477**

**3**

(468.27)**10** = (1000**1010**1100.**0110**1011)**Excess-4**

| **1.CO1** | Add -53 with -89 in 11 bits using 2’s complement system. Justify whether there is overflow or not. |
| --- | --- |
| **2.CO1** | Suppose, you need (37873)9 taka as a reservation fee to reserve the “Daunting Dawn” resort. Furthermore, you need to pay (1024300)5 taka per room. You have decided to rent (0011)BCD rooms. You also need to pay (101110011010)2 taka for using the field at the resort. Apart from these, you need to spend some money for using the swimming pool too. Including pool, the total cost becomes (14FF0)16 taka. So (how much)10 do you need to spend on using the swimming pool? |
| **3.CO1** | **Perform** the following conversion: (379.31)**10** = ( ? )**Excess-4** |

**1**

53 = 110101

+53 = 0110101

+53 in 11 bits = 00000110101

11111001010

+1

\_\_\_\_\_\_\_\_\_\_\_\_

-53 in 11 bits = 11111001011

89 = 1011001

+89 = 01011001

+89 in 11 bits = 00001011001

11110100110

+1

\_\_\_\_\_\_\_\_\_\_\_\_

-89 in 11 bits = 11110100111

**11111001011**

**11110100111**

\_\_\_\_\_\_\_\_\_\_\_\_

**111101110010** (No Overflow as adding two negatives should produce a negative number)

**2**

Do the conversions yourself

Reservation fee = 25500

Room fee = 3x(17450)

Field = 2970

total cost=86000

**Money needed for using Swimming Pool =**

**86000- (25500 + 3x(17450) + 2970) = 86000 - 80820 = 5180**

**3**

(379.31)**10** = (**0111**1011**1101**.0111**0101**)**Excess-4**

| **1.CO1** | Add -47 with -95 in 11 bits using 2’s complement system. Justify whether there is overflow or not. |
| --- | --- |
| **2.CO1** | Suppose, you need (314020)6 taka as a reservation fee to reserve the “Daunting Dawn” resort. Furthermore, you need to pay (25838)9 taka per room. You have decided to rent (0011)BCD rooms. You also need to pay (B9A)16 taka for using the field at the resort. Apart from these, you need to spend some money for using the swimming pool too. Including pool, the total cost becomes (10100111111110000)2 taka. So (how much)10 do you need to spend on using the swimming pool? |
| **3.CO1** | **Perform** the following conversion: (259.73)**10** = ( ? )**Excess-5** |

**1**

47 = 101111

+47 = 0101111

+47 in 11 bits = 00000101111

11111010000

+1

\_\_\_\_\_\_\_\_\_\_\_\_

-47 in 11 bits = 11111010001

95 = 1011111

+95 = 01011111

+95 in 11 bits = 00001011111

11110100000

+1

\_\_\_\_\_\_\_\_\_\_\_\_

-95 in 11 bits = 11110100001

**11111010001**

**11110100001**

\_\_\_\_\_\_\_\_\_\_\_\_

**111101110010** (No Overflow as adding two negatives should produce a negative number)

**2**

Do the conversions yourself

Reservation fee = 25500

Room fee = 3x(17450)

Field = 2970

total cost=86000

**Money needed for using Swimming Pool =**

**86000- (25500 + 3x(17450) + 2970) = 86000 - 80820 = 5180**

**3**

(259.73)**10** = (**0111**1010**1110**.1100**1000**)**Excess-5**