

**1<sup>st</sup> Written Examination**

**Exercise 1: (2 pts):** Use these different codings to code the following relative integers on 8 bits

Decimal	Binary	SVA	C1	C2
+21	00010101	00010101	00010101	00010101
+7	00000111	00000111	00000111	00000111
+22	00010110	00010110	00010110	00010110
-34	00100010	10100010	11011101	11011110

**Exercise 2: (4 pts):** Perform the following operations:

$$(1011.1)_2 + (101.01)_2 = (10000.11)_2 = (16.75)_{10}$$

$$(714)_8 + (\dots)_8 = (5067)_8 \Rightarrow (5067)_8 - (714)_8 = (4153)_8$$

$$(20)_7 = (15)_x, \text{ Find } X \Rightarrow (20)_7 = 2 \cdot 7 = (14)_{10}$$

$$(15)_x = 14 \Rightarrow x + 5 = 14 \Rightarrow x = 9$$

$$(561)_8 - (277)_8 = (?)_{10} \Rightarrow (561)_8 - (277)_8 = (262)_8 = 2 \cdot 8^2 + 6 \cdot 8^1 + 2 \cdot 8^0 = (178)_{10}$$