CS1021 Tutorial #3 Solution
Condition Code Flags

(a)   (i) $0100_2 + 0010_2$ Adding two +ve values and result is +ve so V=0

     (ii) $0101_2 + 0100_2$ Adding two +ve values and result is -ve so V=1

     (iii) $1110_2 + 0101_2$ Adding -ve and +ve value so V=0

     (iv) $1101_2 + 1001_2$ Adding two -ve values and result is +ve so V=1

(b)   (i) 0x11005000 C=1, V=0, N=0, Z=0

     (ii) 0x00000000 C=1, V=0, N=0, Z=1

     (iii) 0xB4004100 C=0, V=1, N=1, Z=0

     (iv) 0x8F1DD4F2 C=0, V=1, N=1, Z=0

     (v) 0x00000000 C=1, V=0, N=0, Z=1

(c)   (i) small positive values

     (ii) negative value + smaller magnitude positive value

     (iii) negative value + larger magnitude positive value

     (iv) two small negative values

     (v) two values with same magnitude and different signs (e.g. -4 + +4)

     (vi) 0 + 0

     (vii) two positive values with a sum greater than $2^{31} - 1$

     (viii) two negative values with a sum less than -2^{31}

     (ix) $-2^{31} + -2^{31}$

© **UNIVERSITY OF DUBLIN 2017**