Year: Month: Date: Subject:

سوال ۲

الف) $29 \Rightarrow 2^4+2^3+2^2+2^0 \rightarrow 011101 \rightarrow -29 = 100011$ +2

$21 \Rightarrow 2^4+2^2+2^0 \rightarrow 010101 \rightarrow -21 = 101011$ +2

$-29-21 \Rightarrow -29+(-21)$

1	1	0	0	1	1
+	1	0	1	0	1	1
overflow!	0	0	1	1	1	0

+4 +1

$29+21$

1	1	1	1	0	1
0	1	1	1	0	1
+	0	1	0	1	0	1
overflow!	1	1	0	0	1	0

+1 +4

ب) $(11001001)_{gray} = (10001110)_{BIN}$ (10001110)

-2 because there is no solution +4

ج) $(11001001)_{BIN} = (10101101)_{gray}$ 10101101

-2 because there is no solution +4

د) 11001001

1	1	1	0	1	0	0	0	1	0	0	1

$P_1\ P_2\ d_3\ P_4\ d_5\ d_6\ d_7\ P_8\ d_9\ d_{10}\ d_{11}\ d_{12}$

BCD $\Rightarrow 111010000100$1 +8

ه) $01111000100$1

$P_1\ P_2\ P_4\ P_8$

$P_1 = 1 \neq 0 \times$ $P_2 = 1+2 = 3$

$P_2 = 0 \times$ $P_4 = 1 \checkmark$ $P_8 = 0 \checkmark$

$\Rightarrow 010110000100$1 -7

Year : Month: Date: Subject:

$(473406.1234)_8 = (?)_{14}$ -8 10

مبنای ۱۰

۴۷۳۴۰۶ = ۴×۸^۵ + ۷×۸^۴ + ۳×۸^۳ + ۴×۸^۲ + ۰×۸^۱ + ۶×۸^۰ =