DIGITAL CODES:-

Example 2.37.

a) Convert binary number 1100110 to Gray code.

1 → 1 → 0 → 0 → 0 → 1 → 1 → 0

1 0 1 0 0 1 0 1

b) Convert Gray code 10101111 to binary.

1 0 1 0 1 1 1 1

1 1 0 0 1 0 1 0

Section 2.11

56. Convert each binary number to Gray code.

a) 11011

1 → 1 → 0 → 1 → 1

1 0 1 1 0

b) 1001010

1 → 0 → 0 → 1 → 0 → 1 → 0

1 1 0 1 1 1 1

c) 1111011101110

1→1→1→1→0→1→1→1→0→1→1→1→0

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

57. Convert each Gray code to binary

a) 1010

1 0 1 0

1 1 0 0

b) 00010

0 0 0 1 0

0 0 0 1 1

c) 110000010001

1 1 0 0 0 0 1 0 0 0 1

1 0 0 0 0 0 1 1 1 1 0

58. Convert following decimal numbers to ASCII

a) 1
00110001

b) 3
00110011

c) 6
00110110

d) 10
0011000 1011 0000

e) 18
0011000 1001 1000

f) 29
0011001 0001 1001

g) 56
0011010 1001 1010

h) 75
0011011 1001 1010 1

i) 107
0011000 1001 1000 0001 1011

59. Determine each ASCII character.

a) 0011000
CAN

b) 1001010
J

c) 0111101
=

d) 0100011
#

e) 01111110
>

f) 1000010
B

60. Decode following ASCII coded message.

1001000 1100101 1101100
H e l

110110 1101111 0101110
l o .

01000000 1001000 1101111
H o

1110111 0100000 1100001
w # a

1110010
r

1100101
e

0100000
#

1111001
y

1101111
o

1110101
u

0111111
?

61. Write message in problem 60 in hexadecimal.

1001000
48

1100101
65

1101100
6C

110110
6C

1101111
6F

0101110
2E

01000000
20

1001000
48

1101111
6F

1110111
77

0100000
20

1100001
61

1110010	1100101	0100000
72	65	20

1111001	1101111	1110101
79	6F	75

0111111
3F

62. Convert following statement to ASCII.

3	0110011	33_{16}
0	0110000	30_{16}
space	0100000	20_{16}
I	1001001	49_{16}
N	1001110	$4E_{16}$
P	1010000	50_{16}
U	1010101	55_{16}
T	1010100	54_{16}
space	0100000	20_{16}
A	1000001	41_{16}
,	0101100	$2C_{16}$
B	1000010	42_{16}