Indraprastha Institute of Information Technology Delhi

ECE 111 Digital Circuits

QUIZ 2

1 (a). Find 8's and 9's complement of : $(172)_9$ [5 marks]

Find 10's and 11's complement of : $(1A1)_{11}$ [5 marks]

(b) Under a certain base N, following arithmetic is valid for N<10:

$$(105)_N - (40)_N = (55)_N$$

Find the value of N. [5 marks]

2. In a certain application four inputs A, B, C, D are fed to logic circuit, producing an output which operates a relay. The relay turns on when f(A, B, C, D) =1 for the following states of the inputs (ABCD) : 0000, 0010, 0101, 0110, 1101 and 1110. for the remaining states the relay is off. Minimize F with the help of a Karnaugh map and realize it using NOR gates. [25 marks]