Department of Electronics and Communication

NATIONAL INSTITUTE OF TECHNOLOGY SRINAGAR

MINOR EXAMINATION

Course: Digital Electronics and Logic Design
Semester: 4th Sem (CSE)
Date: 22/04/19

Time: 1.5 hrs
Max Marks: 30
Code: ECE 403

Attempt all the questions:

Q1. (a) Write the first 25 numbers of a number system of base 4 and digits 0,1, x and y. [5]

(b) Do the following conversions: [5]

i. $(111001.101)_2 = (\quad)_8$
ii. $(1234.15)_8 = (\quad)_{16}$
iii. $(1234.15)_8 = (\quad)_{10}$
iv. $(514.21)_8 = (\quad)_{16}$
v. $(1221.101)_3 = (\quad)_7$

Q2. (a) Solve the following using K-maps:
$F(A,B,C,D,E) = \Sigma m(0,2,5,7,13,15,18,20,21,23,28,29,31)$ [5]

(b) What is a multiplexer. Give its applications. Write the truth table for 8:1 MUX and implement it using NAND gates only. [5]

Q3. (a) How is (7,4) Hamming code used for error detection and correction. Explain with an Example. [4]

(b) Construct a 1:16 Demux using 1:4 Demux also write its Truth Table. [2]

(c) What is an Encoder and hows it different from a priority encoder. Draw their truth table and logic diagram to exaplain the same. [4]

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