Subject Code: 10B11EC401

Subject Name: Digital Electronics

Course Credits: 04

Maximum Marks: 15

Time: 1HR.

Attempt all questions. All parts of each question have to be answered in one place. Carrying of mobile phone in examination centre will be treated as unfair means case.

Q 1a) Convert octal number **473** to BCD, Excess-3, Hexadecimal, 8's complement form.

(0.5*4=2)

Q 1b) Add -25 to +14 using the 8-bit 1's complement method. **(1)**

Q 1c) Assume an arbitrary number system having a radix of 5 & 0, 1, 2, N, P as its independent digits. Determine the decimal equivalent of $(12NP.N1)_5$. **(1)**

Q 1d) Convert $(AF3)_{16}$ to gray code representation. **(1)**

Q 2a) Convert IEEE 32 bit floating number **0100 0111 0001 1011 1100 1111 1001 0000** into decimal number. **(2.5)**

Q 2b) Test the following Hamming code sequence **(100110111101011)** for 11-bit message and correct it if necessary. Show the error code word and write down the corrected code word.

(2.5)

Q 3a) Reduce the following expression using K-map and realize the minimized expression using universal gate only. **Y= πM (3,6,8,11,13,14) .d (1,5,7,10)** **(2.5)**

Q 3b) Reduce the following expression using K-map and implement the minimized expression using AOI logic and universal gate. **F= AB+ A$\overline{C}$+ C+ AD+ A$\overline{B}$C+ ABC** **(2.5)**