## **ELECTRONICS ENGINEERING**

## **ASSIGNMENT-04**

## **Digital Systems**

## **Note: Write answers for any FIVE questions**

- **Q1.** Define number system and number representations and explain (1) Base or radix (ii) Digits in number system (ii) Digit position in a number system [KL2]
- Q2. Explain (i) decimal number system (ii) Binary number system (iii) Octal number system [KL2]
- Q3. Explain (i) Hexa decimal number system (ii) Octal number system [KL2]
- Q4. Explain Binary to octal number conversion and vice versa with example [KL2]
- **Q5.** Convert following numbers to binary [KL3]
- a.  $(634)_8$
- b. (725.63)<sub>8</sub>
- c.  $(3FD)_H$
- d. (614.15)<sub>7</sub>
- **Q6.** Obtain the 2's complement of (i)  $(1011)_2$  (ii)  $(10110010)_2$  [KL3]
- **Q7.** Determine the value of x if (1)  $(193)_x = (623)_8$  (ii)  $(225)_x = (341)_8$  [KL3]
- Q8. What do you interpret by SSI, MSI, LSI and VLSI circuits? [KL2]
- Q9. Apply K map minimization considering one example of your choice. [KL3]
- **Q10.** Discuss rules of Boolean algebra simplification. [KL2]
- Q11. Apply K map concept to find the minimized logical expression for a logic circuit  $Y = \sum m(0, 1, 2, 5, 13, 15)$ . [KL3]
- Q12. Convert decimal (97.231)10 to Binary, convert hexadecimal (3A9F)16 to decimal.